COMP9414 Artificial Intelligence

Assignment 1: Constraint Satisfaction Search

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Due Date: Week 5, Friday, October 17, 5.00pm

Objective

This assignment concerns developing optimal solutions to a scheduling problem inspired by the scenario of a manufacturing plant that has to fulfil multiple customer orders with varying deadlines, but where there may be constraints on tasks and on relationships between tasks. Any number of tasks can be scheduled at the same time, but it is possible that some tasks cannot be finished before their deadline. A task finishing late is acceptable, however incurs a cost, which for this assignment is a simple (dollar) amount per hour that the task is late.

A *fuzzy scheduling* problem in this scenario is simplified by ignoring customer orders and having just one machine and a number of *tasks*, each with a fixed duration in hours. Each task must start and finish on the same day, within working hours (9am to 5pm). In addition, there can be *constraints*, both on single tasks and between two tasks. One type of constraint is that a task can have a deadline, which can be "hard" (the deadline must be met in any valid schedule) or "soft" (the task may be finished late – though still at or before 5pm – but with a "cost" per hour for missing the deadline). The aim is to develop an overall schedule for all the tasks (in a single week) that minimizes the total cost of all the tasks that finish late, provided that all the hard constraints on tasks are satisfied.

More technically, this assignment is an example of a *constraint optimization problem* (or *constrained optimization problem*), a problem that has constraints like a standard Constraint Satisfaction Problem (CSP), but also a *cost* associated with each solution. For this assignment, we will use a *greedy* algorithm to find optimal solutions to fuzzy scheduling problems that are specified as text strings. However, unlike the greedy search algorithm described in the lectures on search, this greedy algorithm has the property that it is guaranteed to find an optimal solution for any problem (if a solution exists).

The assignment will use the AIPython code of Poole & Mackworth. You are given code to translate fuzzy scheduling problems specified as text strings into CSPs with a cost, and you are given code for several constraint solving algorithms – based on domain splitting and arc consistency, and based on depth-first search. The assignment will be to implement some missing procedures and to analyse the performance of the constraint solving methods, both analytically and experimentally.

Submission Instructions

- This is an individual assignment.

- Write your answers in **this** notebook and submit **this** notebook on Moodle under **Assignment 1**.

- Name your submission `<zid>-<firstname>-<lastname>.ipynb` where `<firstname>-<lastname>` is your **real** (not Moodle) name.

- Make sure you set up AIPython (as done below) so the code can be run on either CSE machines or a marker's own machine.

- Do not submit any AIPython code. Hence do not change any AIPython code to make your code run.

- Make sure your notebook runs cleanly (restart the kernel, clear all outputs and run each cell to check).

- After checking that your notebook runs cleanly, run all cells and submit the notebook **with** the outputs included (do not submit the empty version).

- Make sure images (for plots/graphs) are **included** in the notebook you submit (sometimes images are saved on your machine but are not in the notebook).

- Do not modify the existing code in this notebook except to answer the questions. Marks will be given as and where indicated.

- If you want to submit additional code (e.g. for generating plots), add that at the end of the notebook.

- **Important: Do not distribute any of this code on the Internet. This includes ChatGPT. Do not put this assignment into any LLM.**

Late Penalties

Standard UNSW late penalties apply (5% of the value of the assignment per day or part day late).

Note: Unlike the CSE systems, there is no grace period on Moodle. The due date and time is 5pm **precisely** on Friday October 17.

Important: You can submit as many times as you want before the due date, but if you do submit before the due date, you cannot submit on Moodle after the due date. If you do not submit before the due date, you can submit on Moodle after the due date.

Plagiarism

Remember that ALL work submitted for this assignment must be your own work and no sharing or copying of code or answers is allowed. You may discuss the assignment with other students but must not collaborate on developing answers to the questions. You

may use code from the Internet only with suitable attribution of the source. You may not use ChatGPT or any similar software to generate any part of your explanations, evaluations or code. Do not use public code repositories on sites such as github or file sharing sites such as Google Drive to save any part of your work – make sure your code repository or cloud storage is private and do not share any links. This also applies after you have finished the course, as we do not want next year's students accessing your solution, and plagiarism penalties can still apply after the course has finished.

All submitted assignments will be run through plagiarism detection software to detect similarities to other submissions, including from past years. You should **carefully** read the UNSW policy on academic integrity and plagiarism (linked from the course web page), noting, in particular, that collusion (working together on an assignment, or sharing parts of assignment solutions) is a form of plagiarism.

Finally, do not use any contract cheating "academies" or online "tutoring" services. This counts as serious misconduct with heavy penalties up to automatic failure of the course with 0 marks, and expulsion from the university for repeat offenders.

Fuzzy Scheduling

A CSP for this assignment is a set of variables representing tasks, binary constraints on pairs of tasks, and unary constraints (hard or soft) on tasks. The domains are all the working hours in one week, and a task duration is in hours. Days are represented (in the input and output) as strings 'mon', 'tue', 'wed', 'thu' and 'fri', and times are represented as strings '9am', '10am', '11am', '12pm', '1pm', '2pm', '3pm', '4pm' and '5pm'. The only possible values for the start and end times of a task are combinations of a day and times, e.g. 'mon 9am'. Each task name is a string (with no spaces), and the only soft constraints are the soft deadline constraints.

There are three types of constraint:

- **Binary Constraints:** These specify a hard requirement for the relationship between two tasks.
- **Hard Domain Constraints:** These specify hard requirements for the tasks themselves.
- **Soft Deadline Constraints:** These constraints specify that a task may finish late, but with a given cost.

Each soft constraint has a function defining the *cost* associated with violating the preference, that the constraint solver must minimize, while respecting all the hard constraints. The *cost* of a solution is simply the sum of the costs for the soft constraints that the solution violates (and is always a non-negative integer).

This is the list of possible constraints for a fuzzy scheduling problem (comments below are for explanation and do **not** appear in the input specification; however, the code we supply *should* work with comments that take up a full line):

```
# binary constraints
constraint, ⟨t1⟩ before ⟨t2⟩           # t1 ends when or before
t2 starts
constraint, ⟨t1⟩ after ⟨t2⟩            # t1 starts after or when
t2 ends
constraint, ⟨t1⟩ same-day ⟨t2⟩         # t1 and t2 are scheduled
on the same day
constraint, ⟨t1⟩ starts-at ⟨t2⟩        # t1 starts exactly when
t2 ends

# hard domain constraints
domain, ⟨t⟩, ⟨day⟩, hard                              # t
starts on given day at any time
domain, ⟨t⟩, ⟨time⟩, hard                             # t
starts at given time on any day
domain, ⟨t⟩, starts-before ⟨day⟩ ⟨time⟩, hard        # t
starts at or before day, time
domain, ⟨t⟩, starts-after ⟨day⟩ ⟨time⟩, hard         # t
starts at or after day, time
domain, ⟨t⟩, ends-before ⟨day⟩ ⟨time⟩, hard          # t
ends at or before day, time
domain, ⟨t⟩, ends-after ⟨day⟩ ⟨time⟩, hard           # t
starts at or after day, time
domain, ⟨t⟩, starts-in ⟨day1⟩ ⟨time1⟩-⟨day2⟩ ⟨time2⟩, hard  # day-
time range for start time; includes day1, time1 and day2, time2
domain, ⟨t⟩, ends-in ⟨day1⟩ ⟨time1⟩-⟨day2⟩ ⟨time2⟩, hard     # day-
time range for end time; includes day1, time1 and day2, time2
domain, ⟨t⟩, starts-before ⟨time⟩, hard               # t
starts at or before time on any day
domain, ⟨t⟩, ends-before ⟨time⟩, hard                 # t
ends at or before time on any day
domain, ⟨t⟩, starts-after ⟨time⟩, hard                # t
starts at or after time on any day
domain, ⟨t⟩, ends-after ⟨time⟩, hard                  # t
ends at or after time on any day

# soft deadline constraint
domain, ⟨t⟩, ends-by ⟨day⟩ ⟨time⟩ ⟨cost⟩, soft        # cost per
hour of missing deadline
```

The input specification will consist of several "blocks", listing the tasks, binary constraints, hard unary constraints and soft deadline constraints for the given problem. A "declaration" of each task will be included before it is used in a constraint. A sample input specification is as follows. Comments are for explanation and do **not** have to be included in the input.

```
# two tasks with two binary constraints and soft deadlines
task, t1 3
task, t2 4
# two binary constraints
constraint, t1 before t2
constraint, t1 same-day t2
# domain constraint
domain, t2 mon
```

```
    # soft deadline constraints
    domain, t1 ends-by mon 3pm 10
    domain, t2 ends-by mon 3pm 10
```

Preparation

1. Set up AIPython

You will need AIPython for this assignment. To find the aipython files, the aipython directory has to be added to the Python path.

Do this temporarily, as done here, so we can find AIPython and run your code (you will not submit any AIPython code).

You can add either the full path (using `os.path.abspath`), or as in the code below, the relative path.

```
In [81]:  import sys
          sys.path.append('aipython') # change to your directory
          sys.path # check that aipython is now on the path
```

```
Out[81]:  ['c:\\Users\\lenovo\\Desktop\\9414',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\python310.zip',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\DLLs',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\lib',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310',
           '',
           'C:\\Users\\lenovo\\AppData\\Roaming\\Python\\Python310\\site-packages',
           'C:\\Users\\lenovo\\AppData\\Roaming\\Python\\Python310\\site-packages\\win3
          2',
           'C:\\Users\\lenovo\\AppData\\Roaming\\Python\\Python310\\site-packages\\win32
          \\lib',
           'C:\\Users\\lenovo\\AppData\\Roaming\\Python\\Python310\\site-packages\\Python
          win',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\lib\\site-packages',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\lib\\site-packages\\win32',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\lib\\site-packages\\win32\\lib',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\lib\\site-packages\\Pythonwin',
           'c:\\Users\\lenovo\\.conda\\envs\\aipy310\\lib\\site-packages\\setuptools\\_ve
          ndor',
           'aipython',
           'aipython',
           'aipython',
           'aipython',
           'aipython']
```

2. Representation of Day Times

Input and output are day time strings such as 'mon 10am' or a range of day time strings such as 'mon 10am-mon 4pm'.

The CSP will represent these as integer hour numbers in the week, ranging from 0 to 39.

The following code handles the conversion between day time strings and hour numbers.

```python
# -*- coding: utf-8 -*-

""" day_time string format is a day plus time, e.g. Mon 10am, Tue 4pm, or just T
    if only day or time, returns day number or hour number only
    day_time strings are converted to and from integer hours in the week from 0
"""
class Day_Time():
    num_hours_in_day = 8
    num_days_in_week = 5

    def __init__(self):
        self.day_names = ['mon','tue','wed','thu','fri']
        self.time_names = ['9am','10am','11am','12pm','1pm','2pm','3pm','4pm']

    def string_to_week_hour_number(self, day_time_str):
        """ convert a single day_time into an integer hour in the week """
        value = None
        value_type = None
        day_time_list = day_time_str.split()
        if len(day_time_list) == 1:
            str1 = day_time_list[0].strip()
            if str1 in self.time_names: # this is a time
                value = self.time_names.index(str1)
                value_type = 'hour_number'
            else:
                value = self.day_names.index(str1) # this is a day
                value_type = 'day_number'
            # if not day or time, throw an exception
        else:
            value = self.day_names.index(day_time_list[0].strip())*self.num_hour
                + self.time_names.index(day_time_list[1].strip())
            value_type = 'week_hour_number'
        return (value_type, value)

    def string_to_number_set(self, day_time_list_str):
        """ convert a list of day-times or ranges 'Mon 9am, Tue 9am-Tue 4pm' int
            e.g. 'mon 9am-1pm, mon 4pm' -> [0,1,2,3,4,7]
        """
        number_set = set()
        type1 = None
        for str1 in day_time_list_str.lower().split(','):
            if str1.find('-') > 0:
                # day time range
                type1, v1 = self.string_to_week_hour_number(str1.split('-')[0].s
                type2, v2 = self.string_to_week_hour_number(str1.split('-')[1].s
                if type1 != type2: return None # error, types in range spec are
                number_set.update({n for n in range(v1, v2+1)})
            else:
                # single day time
                type2, value2 = self.string_to_week_hour_number(str1)
                if type1 != None and type1 != type2: return None # error: type i
                type1 = type2
                number_set.update({value2})
        return (type1, number_set)

    # convert integer hour in week to day time string
    def week_hour_number_to_day_time(self, week_hour_number):
        hour = self.day_hour_number(week_hour_number)
        day = self.day_number(week_hour_number)
```

```python
            return self.day_names[day]+' '+self.time_names[hour]

    # convert integer hour in week to integer day and integer time in day
    def hour_day_split(self, week_hour_number):
        return (self.day_hour_number(week_hour_number), self.day_number(week_hou

    # convert integer hour in week to integer day in week
    def day_number(self, week_hour_number):
        return int(week_hour_number / self.num_hours_in_day)

    # convert integer hour in week to integer time in day
    def day_hour_number(self, week_hour_number):
        return week_hour_number % self.num_hours_in_day


    def __repr__(self):
        day_hour_number = self.week_hour_number % self.num_hours_in_day
        day_number = int(self.week_hour_number / self.num_hours_in_day)
        return self.day_names[day_number]+' '+self.time_names[day_hour_number]
```

3. Constraint Satisfaction Problems with Costs over Tasks with Durations

Since AI Python does not provide the CSP class with an explicit cost, we implement our own class that extends `CSP`.

We also store the cost functions and the durations of all tasks explicitly in the CSP.

The durations of the tasks are used in the `hold` function to evaluate constraints.

In [83]:
```python
from cspProblem import CSP, Constraint

# We need to override Constraint, because tasks have durations
class Task_Constraint(Constraint):
    """A Task_Constraint consists of
    * scope: a tuple of variables
    * spec: text description of the constraint used in debugging
    * condition: a function that can applied to a tuple of values for the variab
    * durations: durations of all tasks
    * func_key: index to the function used to evaluate the constraint
    """
    def __init__(self, scope, spec, condition, durations, func_key):
        super().__init__(scope, condition, spec)
        self.scope = scope
        self.condition = condition
        self.durations = durations
        self.func_key = func_key

    def holds(self, assignment):
        """returns the value of Constraint con evaluated in assignment.

        precondition: all variables are assigned in assignment

        CSP has only binary constraints
        condition is in the form week_hour_number1, week_hour_number2
        add task durations as appropriate to evaluate condition
        """
        if self.func_key == 'before':
            # t1 ends before t2 starts, so we need add duration to t1 assignment
```

```python
                ass0 = assignment[self.scope[0]] + self.durations[self.scope[0]]
                ass1 = assignment[self.scope[1]]
        elif self.func_key == 'after':
                # t2 ends before t1 starts so we need add duration to t2 assignment
                ass0 = assignment[self.scope[0]]
                ass1 = assignment[self.scope[1]] + self.durations[self.scope[1]]
        elif self.func_key == 'starts-at':
                # t1 starts exactly when t2 ends, so we need add duration to t2 assi
                ass0 = assignment[self.scope[0]]
                ass1 = assignment[self.scope[1]] + self.durations[self.scope[1]]
        else:
                return self.condition(*tuple(assignment[v] for v in self.scope))
            # condition here comes from get_binary_constraint
        return self.condition(*tuple([ass0, ass1]))

# implement nodes as CSP problems with cost functions
class CSP_with_Cost(CSP):
    """ cost_functions maps a CSP var, here a task name, to a list of functions
    def __init__(self, domains, durations, constraints, cost_functions, soft_day
        self.domains = domains
        self.variables = self.domains.keys()
        super().__init__("title of csp", self.variables, constraints)
        self.durations = durations
        self.cost_functions = cost_functions
        self.soft_day_time = soft_day_time
        self.soft_costs = soft_costs
        self.cost = self.calculate_cost()

    # specific to fuzzy scheduling CSP problems
    def calculate_cost(self):
        cost = 0
         # Iterate over all tasks and calculate their cost
        for task in self.domains:
            domain_values = self.domains[task]
            if not domain_values:
                return float('inf')
            func_list = self.cost_functions.get(task, [])
            func = func_list[0] if func_list else None
             # Select tasks with soft constraints via ends_by
            if func is None or getattr(func, "__name__", "") != "ends_by":
                continue
             # Parameters for soft constraints
            daytime_str = self.soft_day_time[task]
            duration = self.durations[task]
            unit_cost = int(self.soft_costs[task])
             # Calculate the min cost
            min_cost = min(func(val, daytime_str, duration, unit_cost) for val i
            cost += min_cost
        return cost
    def __repr__(self):
        """ string representation of an arc"""
        return "CSP_with_Cost("+str(list(self.domains.keys()))+':'+str(self.cost
```

This formulates a solver for a CSP with cost as a search problem, using domain splitting with arc consistency to define the successors of a node.

In [84]:
```python
from cspConsistency import Con_solver, select, partition_domain
from searchProblem import Arc, Search_problem
from operator import eq, le, ge
```

```python
# rewrites rather than extends Search_with_AC_from_CSP
class Search_with_AC_from_Cost_CSP(Search_problem):
    """ A search problem with domain splitting and arc consistency """
    def __init__(self, csp):
        self.cons = Con_solver(csp) # copy of the CSP with access to arc consist
        self.domains = self.cons.make_arc_consistent(csp.domains)
        self.constraints = csp.constraints
        self.cost_functions = csp.cost_functions
        self.durations = csp.durations
        self.soft_day_time = csp.soft_day_time
        self.soft_costs = csp.soft_costs
        csp.domains = self.domains # after arc consistency
        self.csp = csp

    def is_goal(self, node):
        """ node is a goal if all domains have exactly 1 element """
        return all(len(node.domains[var]) == 1 for var in node.domains)

    def start_node(self):
        return CSP_with_Cost(self.domains, self.durations, self.constraints,
                             self.cost_functions, self.soft_day_time, self.soft_

    def neighbors(self, node):
        """"returns the neighboring nodes of node.
        """
        neighs = []
        var = select(x for x in node.domains if len(node.domains[x]) > 1) # chos
        if var:
            dom1, dom2 = partition_domain(node.domains[var])
            self.display(2, "Splitting", var, "into", dom1, "and", dom2)
            to_do = self.cons.new_to_do(var, None)
            for dom in [dom1,dom2]:
                newdoms = node.domains | {var: dom} # overwrite domain of var wi
                cons_doms = self.cons.make_arc_consistent(newdoms, to_do)
                if all(len(cons_doms[v]) > 0 for v in cons_doms):
                    # all domains are non-empty
                    # make new CSP_with_Cost node to continue the search
                    csp_node = CSP_with_Cost(cons_doms, self.durations, self.con
                                self.cost_functions, self.soft_day_time, self.soft_
                    neighs.append(Arc(node, csp_node))
                else:
                    self.display(2,"...",var,"in",dom,"has no solution")
        return neighs

    def heuristic(self, n):
        return n.cost
```

4. Fuzzy Scheduling Constraint Satisfaction Problems

The following code sets up a CSP problem from a given specification.

Hard (unary) domain constraints are applied to reduce the domains of the variables
before the constraint solver runs.

In [85]:
```python
# domain specific CSP builder for week schedule
class CSP_builder():
    # list of text lines without comments and empty lines
```

```python
        _, default_domain = Day_Time().string_to_number_set('mon 9am-fri 4pm') # sho

        # hard unary constraints: domain is a list of values, params is a single val
        # starts-before, ends-before (for starts-before duration should be 0)
        # vals in domain are actual task start/end date/time, so must be val <= what
        def apply_before(self, param_type, params, duration, domain):
            domain_orig = domain.copy()
            param_val = params.pop()
            for val in domain_orig: # val is week_hour_number
                val1 = val + duration
                h, d = Day_Time().hour_day_split(val1)
                if param_type == 'hour_number' and h > param_val:
                    if val in domain: domain.remove(val)
                if param_type == 'day_number' and d > param_val:
                    if val in domain: domain.remove(val)
                if param_type == 'week_hour_number' and val1 > param_val:
                    if val in domain: domain.remove(val)
            return domain

        def apply_after(self, param_type, params, duration, domain):
            domain_orig = domain.copy()
            param_val = params.pop()
            for val in domain_orig: # val is week_hour_number
                val1 = val + duration
                h, d = Day_Time().hour_day_split(val1)
                if param_type == 'hour_number' and h < param_val:
                    if val in domain: domain.remove(val)
                if param_type == 'day_number' and d < param_val:
                    if val in domain: domain.remove(val)
                if param_type == 'week_hour_number' and val1 < param_val:
                    if val in domain: domain.remove(val)
            return domain

        # day time range only
        # includes starts-in, ends-in
        # duration is 0 for starts-in, task duration for ends-in
        def apply_in(self, params, duration, domain):
            domain_orig = domain.copy()
            for val in domain_orig: # val is week_hour_number
                # task must be within range
                if val in domain and val+duration not in params:
                    domain.remove(val)
            return domain

        # task must start at day/time
        def apply_at(self, param_type, param,domain):
            domain_orig = domain.copy()
            for val in domain_orig:
                h, d = Day_Time().hour_day_split(val)
                if param_type == 'hour_number' and param != h:
                    if val in domain: domain.remove(val)
                if param_type == 'day_number' and param != d:
                    if val in domain: domain.remove(val)
                if param_type == 'week_hour_number' and param != val:
                    if val in domain: domain.remove(val)
            return domain

        # soft deadline constraints: return cost to break constraint
        # ends-by implementation: domain_dt is the day, hour from the domain
        # constr_dt is the soft const spec, dur is the duration of task
```

```python
        # soft_cost is the unit cost of completion delay
        # so if the tasks starts on domain_dt, it ends on domain_dt+dur
        """
        <t> ends-by <day> <time>, both must be specified
        delay = day_hour(T2) - day_hour(T1) + 24*(D2 - D1),
        where day_hour(9am) = 0, day_hour(5pm) = 7
        """
        def ends_by(self, domain_dt, constr_dt_str, dur, soft_cost):
            param_type,params = Day_Time().string_to_number_set(constr_dt_str)
            param_val = params.pop()
            dom_h, dom_d = Day_Time().hour_day_split(domain_dt+dur)
            if param_type == 'week_hour_number':
                con_h, con_d = Day_Time().hour_day_split(param_val)
                return 0 if domain_dt + dur <= param_val else soft_cost*(dom_h - con
            else:
                return None # not good, must be day and time

        def no_cost(self, day ,hour):
            return 0

        # hard binary constraint, the rest are implemented as gt, lt, eq
        def same_day(self, week_hour1, week_hour2):
            h1, d1 = Day_Time().hour_day_split(week_hour1)
            h2, d2 = Day_Time().hour_day_split(week_hour2)
            return d1 == d2

        # domain is a list of values
        def apply_hard_constraint(self, domain, duration, spec):
            tokens = func_key = spec.split(' ')
            if len(tokens) > 1:
                func_key = spec.split(' ')[0].strip()
                param_type, params = Day_Time().string_to_number_set(spec[len(func_ke
                if func_key == 'starts-before':
                    # duration is 0 for starts before, since we do not modify the time
                    return self.apply_before(param_type, params, 0, domain)
                if func_key == 'ends-before':
                    return self.apply_before(param_type, params, duration, domain)
                if func_key == 'starts-after':
                    return self.apply_after(param_type,params,0,domain)
                if func_key == 'ends-after':
                    return self.apply_after(param_type, params, duration, domain)
                if func_key == 'starts-in':
                    return self.apply_in(params, 0, domain)
                if func_key == 'ends-in':
                    return self.apply_in(params, duration, domain)
            else:
                # here we have task day or time, it has no func key so we need to par
                param_type,params = Day_Time().string_to_week_hour_number(spec)
                return self.apply_at(param_type, params, domain)

        def get_cost_function(self, spec):
            func_dict = {'ends-by':self.ends_by, 'no-cost':self.no_cost}
            return [func_dict[spec]]

        # spec is the text of a constraint, e.g. 't1 before t2'
        # durations are durations of all tasks
        def get_binary_constraint(self, spec, durations):
            tokens = spec.strip().split(' ')
            if len(tokens) != 3: return None # error in spec
            # task1 relation task2
```

```python
        fun_dict = {'before':le, 'after':ge, 'starts-at':eq, 'same-day':self.sam
        return Task_Constraint((tokens[0].strip(), tokens[2].strip()), spec, fun

    def get_CSP_with_Cost(self, input_lines):
        # Note: It would be more elegant to make task a class but AIpython is no
        # CSP_with_Cost inherits from CSP, which takes domains and constraints f
        domains = dict()
        constraints = []
        cost_functions = dict()
        durations = dict() # durations of tasks
        soft_day_time = dict() # day time specs of soft constraints
        soft_costs = dict() # costs of soft constraints

        for input_line in input_lines:
            func_spec = None
            input_line_tokens = input_line.strip().split(',')
            if len(input_line_tokens) != 2:
                return None # must have number of tokens = 2
            line_token1 = input_line_tokens[0].strip()
            line_token2 = input_line_tokens[1].strip()
            if line_token1 == 'task':
                tokens = line_token2.split(' ')
                if len(tokens) != 2:
                    return None # must have number of tokens = 3
                key = tokens[0].strip()
                # check the duration and save it
                duration = int(tokens[1].strip())
                if duration > Day_Time().num_hours_in_day:
                    return None
                durations[key] = duration
                # set zero cost function for this task as default, may add real
                cost_functions[key] = self.get_cost_function('no-cost')
                soft_costs[key] = '0'
                soft_day_time[key] = 'fri 5pm'
                # restrict domain to times that are within allowed range
                # that is start 9-5, start+duration in 9-5
                domains[key] = {x for x in self.default_domain \
                                if Day_Time().day_number(x+duration) \
                                == Day_Time().day_number(x)}
            elif line_token1 == 'domain':
                tokens = line_token2.split(' ')
                if len(tokens) < 2:
                    return None # must have number of tokens >= 2
                key = tokens[0].strip()
                # if soft constraint, it is handled differently from hard constr
                if tokens[1].strip() == 'ends-by':
                    # need to retain day time and cost from the line
                    # must have task, 'end-by', day, time, cost
                    # or task, 'end-by', day, cost
                    # or task, 'end-by', time, cost
                    if len(tokens) != 5:
                        return None
                    # get the rest of the line after 'ends-by'
                    soft_costs[key] = int(tokens[len(tokens)-1].strip()) # last
                    # pass the day time string to avoid passing param_type
                    day_time_str = tokens[2] + ' ' + tokens[3]
                    soft_day_time[key] = day_time_str
                    cost_functions[key] = self.get_cost_function(tokens[1].strip
                else:
                    # the rest of domain spec, after key, are hard unary domain
```

```
                    # func spec has day time, we also need duration
                    dur = durations[key]
                    func_spec = line_token2[len(key):].strip()
                    domains[key] = self.apply_hard_constraint(domains[key], dur,
            elif line_token1 == 'constraint': # all binary constraints
                constraints.append(self.get_binary_constraint(line_token2, durat
            else:
                return None

        return CSP_with_Cost(domains, durations, constraints, cost_functions, so

    def create_CSP_from_spec(spec: str):
        input_lines = list()
        spec = spec.split('\n')
        # strip comments
        for input_line in spec:
            input_line = input_line.split('#')
            if len(input_line[0]) > 0:
                input_lines.append(input_line[0])
                print(input_line[0])
        # construct initial CSP problem
        csp = CSP_builder()
        csp_problem = csp.get_CSP_with_Cost(input_lines)
        return csp_problem
```

5. Greedy Search Constraint Solver using Domain Splitting and Arc Consistency

Create a GreedySearcher to search over the CSP.

The *cost* function for CSP nodes is used as the heuristic, but is actually a direct estimate of the total path cost function *f* used in A* Search.

```
In [86]:  from searchGeneric import AStarSearcher

          class GreedySearcher(AStarSearcher):
              """ returns a searcher for a problem.
              Paths can be found by repeatedly calling search().
              """

              def add_to_frontier(self, path):
                  """ add path to the frontier with the appropriate cost """
                  # value = path.cost + self.problem.heuristic(path.end()) -- A* definitio
                  value = path.end().cost
                  self.frontier.add(path, value)
```

Run the GreedySearcher on the CSP derived from the sample input.

Note: The solution cost will always be 0 (which is wrong for the sample input) until you write the cost function in the cell above.

```
In [87]:  # Sample problem specification

          sample_spec = """
          # two tasks with two binary constraints and soft deadlines
          task, t1 3
          task, t2 4
          # two binary constraints
```

```
constraint, t1 before t2
constraint, t1 same-day t2
# domain constraint
domain, t2 mon
# soft deadlines
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by mon 3pm 10
"""
```

In [88]:
```python
# display details (0 turns off)
Con_solver.max_display_level = 0
Search_with_AC_from_Cost_CSP.max_display_level = 2
GreedySearcher.max_display_level = 0

def test_csp_solver(searcher):
    final_path = searcher.search()
    if final_path == None:
        print('No solution')
    else:
        domains = final_path.end().domains
        result_str = ''
        for name, domain in domains.items():
            for n in domain:
                result_str += '\n'+str(name)+': '+Day_Time().week_hour_number_to
        print(result_str[1:]+'\ncost: '+str(final_path.end().cost))

csp_problem = create_CSP_from_spec(sample_spec)
solver = GreedySearcher(Search_with_AC_from_Cost_CSP(csp_problem))
test_csp_solver(solver)
```

```
task, t1 3
task, t2 4
constraint, t1 before t2
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by mon 3pm 10
t1: mon 9am
t2: mon 12pm
cost: 10
```

6. Depth-First Search Constraint Solver

The Depth-First Constraint Solver in AIPython by default uses a random ordering of the variables in the CSP.

We need to modify this code to make it compatible with the arc consistency solver.

Run the solver by calling `dfs_solve1` (first solution) or `dfs_solve_all` (all solutions).

In [89]:
```python
num_expanded = 0
display = False

def dfs_solver(constraints, domains, context, var_order):
    """ generator for all solutions to csp
        context is an assignment of values to some of the variables
        var_order is a list of the variables in csp that are not in context
    """
```

```python
        global num_expanded, display
        to_eval = {c for c in constraints if c.can_evaluate(context)}
        if all(c.holds(context) for c in to_eval):
            if var_order == []:
                print("Nodes expanded to reach solution:", num_expanded)
                yield context
            else:
                rem_cons = [c for c in constraints if c not in to_eval]
                var = var_order[0]
                for val in domains[var]:
                    if display:
                        print("Setting", var, "to", val)
                    num_expanded += 1
                    yield from dfs_solver(rem_cons, domains, context|{var:val}, var_

def dfs_solve_all(csp, var_order=None):
    """ depth-first CSP solver to return a list of all solutions to csp """
    global num_expanded
    num_expanded = 0
    if var_order == None:      # use an arbitrary variable order
        var_order = list(csp.domains)
    return list(dfs_solver(csp.constraints, csp.domains, {}, var_order))

def dfs_solve1(csp, var_order=None):
    """ depth-first CSP solver """
    global num_expanded
    num_expanded = 0
    if var_order == None:      # use an arbitrary variable order
        var_order = list(csp.domains)
    for sol in dfs_solver(csp.constraints, csp.domains, {}, var_order):
        return sol  # return first one
```

Run the Depth-First Solver on the sample problem.

Note: Again there are no costs calculated.

```python
def test_dfs_solver(csp_problem):
    solution = dfs_solve1(csp_problem)
    if solution == None:
        print('No solution')
    else:
        result_str = ''
        for name in solution.keys():
            result_str += '\n'+str(name)+': '+Day_Time().week_hour_number_to_day
        print(result_str[1:])

# call the Depth-First Search solver
csp_problem = create_CSP_from_spec(sample_spec)
test_dfs_solver(csp_problem) # set display to True to see nodes expanded
```

```
task, t1 3
task, t2 4
constraint, t1 before t2
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by mon 3pm 10
Nodes expanded to reach solution: 5
t1: mon 9am
t2: mon 12pm
```

7. Depth-First Search Constraint Solver using Forward Checking with MRV Heuristic

The Depth-First Constraint Solver in AIPython by default uses a random ordering of the variables in the CSP.

We redefine the `dfs_solver` methods to implement the MRV (Minimum Remaining Values) heuristic using forward checking.

Because the AIPython code is designed to manipulate domain sets, we also need to redefine `can_evaluate` to handle partial assignments.

In [91]:
```python
num_expanded = 0
display = False

def can_evaluate(c, assignment):
    """ assignment is a variable:value dictionary
        returns True if the constraint can be evaluated given assignment
    """
    return assignment != {} and all(v in assignment.keys() and type(assignment[v

def mrv_dfs_solver(constraints, domains, context, var_order):
    """ generator for all solutions to csp.
        context is an assignment of values to some of the variables.
        var_order is a list of the variables in csp that are not in context.
    """
    global num_expanded, display
    if display:
        print("Context", context)
    to_eval = {c for c in constraints if can_evaluate(c, context)}
    if all(c.holds(context) for c in to_eval):
        if var_order == []:
            print("Nodes expanded to reach solution:", num_expanded)
            yield context
        else:
            rem_cons = [c for c in constraints if c not in to_eval] # constraint
            var = var_order[0]
            rem_vars = var_order[1:]
            for val in domains[var]:
                if display:
                    print("Setting", var, "to", val)
                num_expanded += 1
                rem_context = context|{var:val}
                # apply forward checking on remaining variables
                if len(var_order) > 1:
                    rem_vars_original = list((v, list(domains[v].copy())) for v
```

```python
                    if display:
                        print("Original domains:", rem_vars_original)
                    # constraints that can't already be evaluated in rem_cons
                    rem_cons_ff = [c for c in constraints if c in rem_cons and n
                    for rem_var in rem_vars:
                        # constraints that can be evaluated by adding a value of
                        any_value = list(domains[rem_var])[0]
                        rem_to_eval = {c for c in rem_cons_ff if can_evaluate(c,
                        # new domain for rem_var are the values for which all ne
                        rem_vals = domains[rem_var].copy()
                        for rem_val in domains[rem_var]:
                            # no constraint with rem_var in the existing context
                            for c in rem_to_eval:
                                if not c.holds(rem_context|{rem_var: rem_val}):
                                    if rem_val in rem_vals:
                                        rem_vals.remove(rem_val)
                        domains[rem_var] = rem_vals
                        # order remaining variables by MRV
                        rem_vars.sort(key=lambda v: len(domains[v]))
                    if display:
                        print("After forward checking:", list((v, domains[v]) fo
                if rem_vars == [] or all(len(domains[rem_var]) > 0 for rem_var i
                    yield from mrv_dfs_solver(rem_cons, domains, context|{var:va
                # restore original domains if changed through forward checking
                if len(var_order) > 1:
                    if display:
                        print("Restoring original domain", rem_vars_original)
                    for (v, domain) in rem_vars_original:
                        domains[v] = domain
        if display:
            print("Nodes expanded so far:", num_expanded)

def mrv_dfs_solve_all(csp, var_order=None):
    """ depth-first CSP solver to return a list of all solutions to csp """
    global num_expanded
    num_expanded = 0
    if var_order == None:      # order variables by MRV
        var_order = list(csp.domains)
        var_order.sort(key=lambda var: len(csp.domains[var]))
    return list(mrv_dfs_solver(csp.constraints, csp.domains, {}, var_order))

def mrv_dfs_solve1(csp, var_order=None):
    """ depth-first CSP solver """
    global num_expanded
    num_expanded = 0
    if var_order == None:      # order variables by MRV
        var_order = list(csp.domains)
        var_order.sort(key=lambda var: len(csp.domains[var]))
    for sol in mrv_dfs_solver(csp.constraints, csp.domains, {}, var_order):
        return sol  # return first one
```

Run this solver on the sample problem.

Note: Again there are no costs calculated.

In [92]:
```python
def test_mrv_dfs_solver(csp_problem):
    solution = mrv_dfs_solve1(csp_problem)
    if solution == None:
        print('No solution')
```

```
    else:
        result_str = ''
        for name in solution.keys():
            result_str += '\n'+str(name)+': '+Day_Time().week_hour_number_to_day
        print(result_str[1:])

# call the Depth-First MRV Search solver
csp_problem = create_CSP_from_spec(sample_spec)
test_mrv_dfs_solver(csp_problem) # set display to True to see nodes expanded
```

```
task, t1 3
task, t2 4
constraint, t1 before t2
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by mon 3pm 10
Nodes expanded to reach solution: 5
t2: mon 12pm
t1: mon 9am
```

Assignment

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Question 1 (4 marks)

Consider the search spaces for the fuzzy scheduling CSP solvers – domain splitting with arc consistency and the DFS solver (without forward checking).

- Describe the search spaces in terms of start state, successor functions and goal state(s) (1 mark)
- What is the branching factor and maximum depth to find any solution for the two algorithms (ignoring costs)? (1 mark)
- What is the worst case time and space complexity of the two search algorithms? (1 mark)
- Give one example of a fuzzy scheduling problem that is *easier* for the domain splitting with arc consistency solver than it is for the DFS solver, and explain why (1 mark)

For the second and third part-questions, give the answer in a general form in terms of fuzzy scheduling CSP size parameters.

Answers for Question 1

1. The search spaces

- Domain splitting with AC:
- Initial state: the CSP obtained after applying hard constraints and AC consistency processing.

- Successor function: select a variable within its domain and split it into two subdomains; perform AC check on each subset to generate new nodes.
- Target state: the nodes where all variables have domain size 1.
- DFS：
- Initial state: empty assignment.
- Successor function: select an unassigned variable and assign it every possible value in current domain.
- Target state: the assignment satisfy the constraints.

2.

We assume n = number of variables, D_i = initial domain size of variable i.

- Domain splitting with AC:
- Branching factor: 2 (each node splits a domain into 2 subsets).
- Maximum depth: sum of initial domain sizes for all variables: $\Sigma_i \log_2(D_i)$.
- DFS :
- Branching factor: average domain size of variables (D).
- Maximum depth: Number of variables (n).

3.

- Domain splitting with AC:
- Time complexy： $O(2^{([\Sigma_i \log_2(D_i)]} * C))$, where the total number of splits is the sum of $\log_2(D_i)$, and C is the cost of AC checks.
- Space complexity: $O(\Sigma_i \log_2(D_i))$.
- DFS:
- Time complexity: $O(\prod D_i * C)$, where $\prod D_i$ is the product of all variable domain sizes (number of possible assignments) and C is the constraint checking cost.
- Space complexity: O(n)

4. Example:

task, t1 2 task, t2 2 task, t3 1 constraint, t1 same-day t2 constraint, t2 same-day t3 constraint, t1 before t2 constraint, t2 before t3 domain, t1 mon

- Reason: Domain splitting with AC can directly remove invalid values through domain splitting and AC constraints, however DFS must traverse each assignment sequentially, subsequently wasting time on backtracking and retries.Under defined constraints such as same-day or before/after, domain partitioning pruning proves more efficient than DFS attempts and tries.

Question 2 (5 marks)

Define the *cost* function for a fuzzy scheduling CSP (i.e. a node in the search space for domain splitting and arc consistency) as the total cost of the soft deadline constraints violated for all of the variables, assuming that each variable is assigned one of the best

possible values from its domain, where a "best" value for a variable *v* is one that has the lowest cost to violate the soft deadline constraint (if any) for that variable *v*.

- Implement the cost function in the indicated cell and place a copy of the code below (3 marks)
- What is its computational complexity (give a general form in terms of fuzzy scheduling CSP size parameters)? (1 mark)
- Show that the cost function *f* never decreases along a path, and explain why this means the search algorithm is optimal (1 mark)

In [93]:
```python
def calculate_cost(self):
        cost = 0
        # Iterate over all tasks and calculate their cost
        for task in self.domains:
            domain_values = self.domains[task]
            if not domain_values:
                return float('inf')
            func_list = self.cost_functions.get(task, [])
            func = func_list[0] if func_list else None
            # Select tasks with soft constraints via ends_by
            if func is None or getattr(func, "__name__", "") != "ends_by":
                continue
            # Parameters for soft constraints
            daytime_str = self.soft_day_time[task]
            duration = self.durations[task]
            unit_cost = int(self.soft_costs[task])
            # Calculate the min cost
            min_cost = min(func(val, daytime_str, duration, unit_cost) for val i
            cost += min_cost
        return cost
```

Answers for Question 2

1. Computational complexity is $O(\sum D_i)$, where: D_i is the current domain size of variable i; $\sum d_i$ represents the total number of times all domain values of all variables are traversed.
2.

- Monotonicity: In domain partitioning algorithms, the domain of a child node constitutes a subset of its parent node's domain. The minimum cost within a child domain is greater than or equal to the minimum cost within the parent domain, i.e., the total cost f(child) ≥ f(parent). Consequently, the cost function never decreases along any path.
- Optimality: The cost function f satisfies non-decreasing costs on the path, meaning the first target node found by the algorithm constitutes the optimal solution. This is because the cost of any other path reaching the target node cannot be lower than that of the current path.

Question 3 (4 marks)

Conduct an empirical evaluation of the domain splitting CSP solver using the cost function defined as above compared to using no cost function (i.e. the zero cost function,

as originally defined in the above cell). Use the *average number of nodes expanded* as a metric to compare the two algorithms.

- Write a function `generate_problem(n)` that takes an integer `n` and generates a problem specification with `n` tasks and a random set of hard constraints and soft deadline constraints in the correct format for the constraint solvers (2 marks)

Run the CSP solver (with and without the cost function) over a number of problems of size `n` for a range of values of `n`.

- Plot the performance of the two constraint solving algorithms on the above metric against `n` (1 mark)
- Quantify the performance gain (if any) achieved by the use of this cost function (1 mark)

In [94]:
```python
import random
import statistics
import math
import matplotlib.pyplot as plt

def generate_problem(n, seed=None):
    # Probability of Different Parameters
    binary_prob = 0.4# Binary Constraint
    same_day_prob = 0.2#same-day
    order_prob = 0.6#before/after
    days = ('mon','tue','wed','thu','fri')
    times = ('9am','10am','11am','12pm','1pm','2pm','3pm','4pm')
    # The minimum and maximum time required for the task
    min_duration = 1
    max_duration = 4
    # Probability and cost range of soft constraints
    soft_prob = 0.8
    cost_range = (5, 20)

    if seed is not None:
        random.seed(seed)
# Generate a random day and time
    def random_daytime():
        return f"{random.choice(days)} {random.choice(times)}"
# Generate n tasks
    lines = []
    for i in range(1, n+1):
        length = random.randint(min_duration, max_duration)
        lines.append(f"task, t{i} {length}")
# Generate binary hard constraints to avoid repetition
    for i in range(1, n+1):
        for j in range(i+1, n+1):
            # Randomly select constraint type
            if random.random() < binary_prob:
                r = random.random()
                if r < same_day_prob:
                    lines.append(f"constraint, t{i} same-day t{j}")
                else:
                    if random.random() < order_prob:
                        if random.random() < 0.5:
                            lines.append(f"constraint, t{i} before t{j}")
                        else:
```

```python
                        lines.append(f"constraint, t{i} after t{j}")
                    elif random.random() < 0.2:
                        lines.append(f"constraint, t{i} starts-at t{j}")
    # Randomly select day
    for i in range(1, n+1):
        if random.random() < 0.15:
            lines.append(f"domain, t{i} {random.choice(days)}")
    # Soft Time Constraints
    for i in range(1, n+1):
        if random.random() < soft_prob:
            dl = random_daytime()
            cost = random.randint(*cost_range)
            lines.append(f"domain, t{i} ends-by {dl} {cost}")

    return "\n".join(lines)
#Solve the CSP problem using the greedy algorithm
def solve_greedy(csp):
    solver = GreedySearcher(Search_with_AC_from_Cost_CSP(csp))
    path = solver.search()
    expanded = getattr(solver, "num_expanded", 0)# Obtain the number of expanded
    if path is None:
        return None, math.inf, expanded
    end = path.end()
    return end.domains, end.cost, expanded
# close the cost function of CSP, no-cost
def close_cost(csp):
    for task in list(csp.cost_functions.keys()):
        csp.cost_functions[task] = [CSP_builder().get_cost_function('no-cost')[0
        csp.soft_costs[task] = 0
# Calculate the average number of expansion nodes of CSP
def get_avg_nodes(problems, use_cost):
    counts = []
    for p in problems:
        csp = create_CSP_from_spec(p)
        if not use_cost:
            close_cost(csp)
        _, _, nodes = solve_greedy(csp)
        counts.append(nodes)
    return statistics.mean(counts) if counts else 0.0
# Test and draw diagrams
def run_q3_test(task_counts=(3,4,5,6), test_times=60, base_seed=200):
    x = [] # X-axis: Number of Tasks
    avg_with_cost = []
    avg_without_cost = []
    improvements = []# # Performance gain of each task
    for n in task_counts:
        x.append(n)
         # Generate the same set of questions to ensure fair comparison.
        problems = [generate_problem(n, seed=base_seed + 100*n + k) for k in ran
        # Calculate the average number of nodes including costs and without cost
        with_cost = get_avg_nodes(problems, use_cost=True)
        without_cost = get_avg_nodes(problems, use_cost=False)
        avg_with_cost.append(with_cost)
        avg_without_cost.append(without_cost)
         # Computational performance gain
    # Formula: ((number of cost-free nodes - number of cost-bearing nodes) / num
        improvement = 100 * (without_cost - with_cost) / without_cost if without
        improvements.append(improvement)
        print(f"Task {n}: with cost={with_cost:.2f}, without cost={without_cost:
    # Calculate the overall average performance gain
```

```python
    if improvements:
        overall_improvement = statistics.mean(improvements)
        print(f"\nOverall Average Improvement: {overall_improvement:.1f}%")

    plt.figure(figsize=(7,4))
    plt.plot(x, avg_with_cost, marker='o', label='With Cost')
    plt.plot(x, avg_without_cost, marker='s', label='Without Cost')
    for i in range(len(x)):
        plt.text(x[i], avg_with_cost[i], f"+{improvements[i]:.1f}%",
                 ha='center', va='bottom', color='red', fontweight='bold', fonts

    plt.xlabel('Number of tasks')
    plt.ylabel('Average nodes expanded')
    plt.title('Comparison of CSP solver  with & without cost function')
    plt.grid(True, alpha=0.35)
    plt.legend()
    plt.show()

run_q3_test(task_counts=(3,4,5,6), test_times=60, base_seed=200)
```

task, t1 4
task, t2 4
task, t3 3
constraint, t2 same-day t3
domain, t3 tue
domain, t1 ends-by thu 1pm 6
domain, t3 ends-by thu 1pm 16
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
task, t1 3
task, t2 3
task, t3 2
constraint, t1 before t3
domain, t2 thu
domain, t3 wed
domain, t1 ends-by thu 9am 19
domain, t2 ends-by tue 3pm 16
domain, t3 ends-by mon 9am 8
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {24, 25} and {26, 27, 28}
Splitting t2 into {24} and {25}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
task, t1 3
task, t2 2
task, t3 3
domain, t3 ends-by tue 2pm 11
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 3
constraint, t1 same-day t3
domain, t1 thu
domain, t3 mon
domain, t1 ends-by thu 3pm 6
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}

... t2 in {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} has no solution
... t2 in {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 1
constraint, t1 same-day t3
domain, t1 ends-by wed 10am 15
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 11am 8
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 3
constraint, t1 after t2
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 4
domain, t1 ends-by wed 4pm 9
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by tue 12pm 10
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} tand {1}
task, t1 4
task, t2 2

```
task, t3 4
domain, t3 tue
domain, t2 ends-by tue 9am 9
domain, t3 ends-by fri 3pm 14
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11}
Splitting t3 into {8} and {9}
task, t1 4
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by tue 10am 12
domain, t2 ends-by wed 12pm 15
domain, t3 ends-by wed 12pm 6
Splitting t1 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t1 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t1 into {8, 9} and {10, 11}
Splitting t1 into {8} and {9}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 2
task, t3 2
domain, t3 wed
domain, t1 ends-by wed 10am 12
domain, t2 ends-by tue 1pm 7
domain, t3 ends-by tue 4pm 17
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
task, t1 3
task, t2 4
task, t3 4
constraint, t1 same-day t2
constraint, t2 after t3
domain, t1 ends-by tue 1pm 15
domain, t2 ends-by thu 9am 13
domain, t3 ends-by mon 10am 18
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Splitting t1 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t1 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t2 thu
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 3pm 7
domain, t3 ends-by mon 1pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {25} and {26, 27}
task, t1 1
task, t2 4
task, t3 2
constraint, t1 after t3
domain, t2 ends-by mon 1pm 5
domain, t3 ends-by tue 2pm 10
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t1 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t1 into {2, 3} and {4, 5}
Splitting t1 into {2} and {3}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by mon 11am 8
domain, t3 ends-by tue 11am 6
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
```

3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
domain, t3 wed
domain, t1 ends-by tue 3pm 17
domain, t2 ends-by fri 10am 9
domain, t3 ends-by tue 12pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
task, t1 2
task, t2 3
task, t3 3
constraint, t1 before t3
domain, t2 tue
domain, t1 ends-by thu 10am 19
domain, t3 ends-by tue 11am 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t3 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t3 into {2, 3} and {8, 9, 4}
Splitting t3 into {2} and {3}
task, t1 2
task, t2 1
task, t3 2
domain, t1 ends-by tue 9am 18
domain, t2 ends-by mon 4pm 14
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}

Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 2
domain, t1 ends-by mon 3pm 19
domain, t2 ends-by fri 1pm 5
domain, t3 ends-by thu 12pm 5
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 3
domain, t1 ends-by thu 10am 16
domain, t2 ends-by wed 12pm 19
domain, t3 ends-by thu 11am 11
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 3
constraint, t1 before t3
domain, t1 ends-by fri 10am 11
domain, t3 ends-by thu 9am 15
Splitting t1 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
27}
Splitting t1 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}

Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t3 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t3 into {8, 4} and {9, 10, 11}
Splitting t3 into {8} and {4}
task, t1 1
task, t2 1
task, t3 4
domain, t2 wed
domain, t1 ends-by tue 11am 20
domain, t2 ends-by mon 1pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t2 into {16} and {17, 18}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
domain, t1 ends-by tue 9am 18
domain, t2 ends-by wed 11am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 4
domain, t1 mon
domain, t2 ends-by tue 9am 19
domain, t3 ends-by fri 1pm 14

```
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 4
task, t3 2
domain, t1 ends-by thu 4pm 16
domain, t2 ends-by fri 4pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 3
constraint, t1 after t3
domain, t2 tue
domain, t1 ends-by mon 1pm 13
domain, t3 ends-by thu 4pm 10
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t2 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t2 into {8} and {9, 10}
task, t1 1
task, t2 4
task, t3 2
constraint, t2 after t3
domain, t1 tue
domain, t2 ends-by thu 11am 13
domain, t3 ends-by mon 10am 12
Splitting t1 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
Splitting t2 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t2 into {32, 33} and {2, 3}
Splitting t2 into {2} and {3}
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task, t1 2
task, t2 2
task, t3 2
constraint, t1 after t2
domain, t1 tue
domain, t1 ends-by thu 2pm 5
domain, t2 ends-by wed 3pm 12
domain, t3 ends-by tue 4pm 14
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 2
constraint, t1 before t2
domain, t1 ends-by mon 3pm 9
domain, t2 ends-by mon 2pm 10
Splitting t1 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
27}
Splitting t1 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 1
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 9am 17
domain, t3 ends-by mon 1pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
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Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 2
task, t3 4
domain, t3 thu
domain, t1 ends-by tue 2pm 18
domain, t2 ends-by wed 2pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
task, t1 3
task, t2 1
task, t3 2
domain, t2 fri
domain, t1 ends-by wed 1pm 16
domain, t2 ends-by mon 2pm 9
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 3
constraint, t2 before t3
domain, t1 ends-by fri 9am 6
domain, t2 ends-by thu 4pm 13
domain, t3 ends-by wed 12pm 10
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t3 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t3 into {8, 4} and {9, 10, 11}
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Splitting t3 into {8} and {4}
task, t1 2
task, t2 2
task, t3 1
constraint, t1 same-day t3
domain, t1 thu
domain, t1 ends-by wed 11am 12
domain, t2 ends-by tue 1pm 13
domain, t3 ends-by mon 10am 5
Splitting t1 into {24, 25, 26} and {27, 28, 29}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t3 into {24} and {25, 26}
task, t1 4
task, t2 2
task, t3 3
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 after t3
domain, t3 wed
domain, t1 ends-by tue 9am 12
domain, t2 ends-by fri 10am 5
domain, t3 ends-by mon 4pm 5
Splitting t1 into {32, 33, 19} and {24, 25, 26, 27}
Splitting t1 into {32} and {33, 19}
Splitting t1 into {33} and {19}
Splitting t2 into {32, 33, 34, 35, 36, 37} and {24, 25, 26, 27, 28, 29}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
task, t1 4
task, t2 2
task, t3 4
constraint, t1 before t3
domain, t3 wed
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by fri 2pm 5
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
task, t1 2
task, t2 4
task, t3 4
domain, t1 tue
domain, t1 ends-by fri 3pm 10
domain, t3 ends-by tue 9am 20
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,

24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 1
task, t3 4
domain, t3 thu
domain, t1 ends-by tue 2pm 16
domain, t3 ends-by thu 9am 6
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
task, t1 4
task, t2 2
task, t3 2
constraint, t1 after t2
domain, t1 ends-by mon 1pm 11
domain, t2 ends-by tue 11am 14
Splitting t1 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t1 into {32, 33} and {2, 3}
Splitting t1 into {2} and {3}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 1
constraint, t1 before t3
constraint, t2 starts-at t3
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 4pm 20
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {33, 34, 35, 4, 36, 9, 10, 11} and {12, 17, 18, 19, 20, 25, 26, 27, 28}
Splitting t2 into {33, 34, 35, 4} and {9, 10, 11, 36}

Splitting t2 into {33, 34} and {35, 4}
Splitting t2 into {35} and {4}
task, t1 3
task, t2 2
task, t3 1
constraint, t2 same-day t3
domain, t1 wed
domain, t3 fri
domain, t1 ends-by mon 3pm 9
domain, t2 ends-by tue 9am 20
domain, t3 ends-by thu 12pm 15
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34} and {35, 36, 37}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
task, t1 3
task, t2 1
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 9am 13
domain, t2 ends-by wed 9am 8
domain, t3 ends-by thu 10am 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 1
task, t3 4
constraint, t1 before t2
domain, t1 ends-by fri 10am 13
domain, t2 ends-by thu 12pm 19
domain, t3 ends-by wed 10am 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}

Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t1 ends-by tue 10am 5
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t3 into {8, 4, 5} and {9, 10, 11}
Splitting t3 into {8} and {4, 5}
task, t1 2
task, t2 1
task, t3 4
domain, t2 mon
domain, t1 ends-by fri 3pm 14
domain, t2 ends-by wed 10am 5
domain, t3 ends-by wed 9am 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 1
task, t3 3
constraint, t1 after t3
domain, t1 ends-by fri 10am 5
domain, t2 ends-by wed 3pm 7
domain, t3 ends-by mon 4pm 18
Splitting t1 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 20, 24, 25, 26, 27, 28}
Splitting t1 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t1 into {3, 4} and {8, 9, 10}
Splitting t1 into {3} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}

Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t1 tue
domain, t3 thu
domain, t1 ends-by mon 1pm 6
domain, t2 ends-by tue 11am 12
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
task, t1 1
task, t2 3
task, t3 4
constraint, t1 same-day t2
constraint, t1 before t3
domain, t1 ends-by fri 12pm 6
domain, t2 ends-by fri 12pm 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t3 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t3 into {8, 1} and {2, 3}
Splitting t3 into {8} and {1}
task, t1 1
task, t2 1
task, t3 3
constraint, t1 after t2
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by wed 10am 16
domain, t3 ends-by mon 12pm 19
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t1 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t1 into {1, 2} and {3, 4}
Splitting t1 into {1} and {2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}

```
task, t1 1
task, t2 1
task, t3 2
domain, t1 ends-by mon 10am 10
domain, t3 ends-by wed 9am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 2
constraint, t2 after t3
domain, t2 tue
domain, t1 ends-by tue 9am 7
domain, t2 ends-by wed 12pm 14
domain, t3 ends-by thu 2pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 2
constraint, t1 after t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 fri
domain, t3 fri
domain, t1 ends-by mon 4pm 15
domain, t2 ends-by wed 9am 12
domain, t3 ends-by wed 10am 14
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 2
constraint, t1 after t2
constraint, t2 after t3
domain, t1 ends-by fri 11am 6
domain, t2 ends-by wed 1pm 19
```

```
domain, t3 ends-by fri 4pm 18
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
task, t1 1
task, t2 1
task, t3 4
constraint, t2 before t3
domain, t2 fri
domain, t3 ends-by wed 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {33} and {34, 35}
task, t1 4
task, t2 1
task, t3 4
constraint, t1 same-day t2
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by fri 3pm 6
domain, t3 ends-by wed 3pm 10
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 2
task, t3 3
constraint, t1 after t3
domain, t1 ends-by mon 12pm 20
domain, t2 ends-by tue 11am 20
domain, t3 ends-by fri 1pm 13
Splitting t1 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t1 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t1 into {3, 4} and {8, 9, 10}
Splitting t1 into {3} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 2
```

constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by mon 10am 15
domain, t2 ends-by thu 1pm 15
domain, t3 ends-by mon 9am 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {2, 3} and {8, 9, 4}
Splitting t2 into {2} and {3}
Splitting t3 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t3 into {2} and {3, 4}
task, t1 4
task, t2 2
task, t3 4
constraint, t2 after t3
domain, t1 ends-by fri 9am 13
domain, t3 ends-by tue 11am 13
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t2 into {8, 4, 5} and {9, 10, 11}
Splitting t2 into {8} and {4, 5}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
domain, t3 tue
domain, t2 ends-by fri 10am 19
domain, t3 ends-by fri 4pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}

```
task, t1 4
task, t2 3
task, t3 1
constraint, t1 after t3
domain, t1 ends-by tue 11am 12
Splitting t1 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t1 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t1 into {8, 1} and {2, 3}
Splitting t1 into {8} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
task, t1 1
task, t2 4
task, t3 3
constraint, t1 same-day t2
domain, t3 mon
domain, t2 ends-by thu 10am 20
domain, t3 ends-by fri 10am 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 4
task, t3 3
constraint, t2 same-day t3
domain, t3 tue
domain, t1 ends-by thu 1pm 6
domain, t3 ends-by thu 1pm 16
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
task, t1 3
task, t2 3
task, t3 2
constraint, t1 before t3
domain, t2 thu
domain, t3 wed
domain, t1 ends-by thu 9am 19
domain, t2 ends-by tue 3pm 16
domain, t3 ends-by mon 9am 8
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
```

Splitting t1 into {0} and {1, 2}
Splitting t2 into {24, 25} and {26, 27, 28}
Splitting t2 into {24} and {25}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
task, t1 3
task, t2 2
task, t3 3
domain, t3 ends-by tue 2pm 11
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 3
constraint, t1 same-day t3
domain, t1 thu
domain, t3 mon
domain, t1 ends-by thu 3pm 6
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
... t2 in {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} has no solution
... t2 in {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29} has no sol
ution
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 1
constraint, t1 same-day t3
domain, t1 ends-by wed 10am 15
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 11am 8
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 3
constraint, t1 after t2

Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 4
domain, t1 ends-by wed 4pm 9
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by tue 12pm 10
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 2
task, t3 4
domain, t3 tue
domain, t2 ends-by tue 9am 9
domain, t3 ends-by fri 3pm 14
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11}
Splitting t3 into {8} and {9}
task, t1 4
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by tue 10am 12
domain, t2 ends-by wed 12pm 15
domain, t3 ends-by wed 12pm 6
Splitting t1 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {32, 33, 34, 35} and {8, 9, 10, 11}

```
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14} and {16, 17, 1
8, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 2
task, t3 2
domain, t3 wed
domain, t1 ends-by wed 10am 12
domain, t2 ends-by tue 1pm 7
domain, t3 ends-by tue 4pm 17
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
task, t1 3
task, t2 4
task, t3 4
constraint, t1 same-day t2
constraint, t2 after t3
domain, t1 ends-by tue 1pm 15
domain, t2 ends-by thu 9am 13
domain, t3 ends-by mon 10am 18
Splitting t1 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t1 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t2 thu
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 3pm 7
domain, t3 ends-by mon 1pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
```

Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {25} and {26, 27}
task, t1 1
task, t2 4
task, t3 2
constraint, t1 after t3
domain, t2 ends-by mon 1pm 5
domain, t3 ends-by tue 2pm 10
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t1 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t1 into {2, 3} and {4, 5}
Splitting t1 into {2} and {3}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by mon 11am 8
domain, t3 ends-by tue 11am 6
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
domain, t3 wed
domain, t1 ends-by tue 3pm 17
domain, t2 ends-by fri 10am 9
domain, t3 ends-by tue 12pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}

```
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
task, t1 2
task, t2 3
task, t3 3
constraint, t1 before t3
domain, t2 tue
domain, t1 ends-by thu 10am 19
domain, t3 ends-by tue 11am 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t3 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t3 into {2, 3} and {8, 9, 4}
Splitting t3 into {2} and {3}
task, t1 2
task, t2 1
task, t3 2
domain, t1 ends-by tue 9am 18
domain, t2 ends-by mon 4pm 14
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 2
domain, t1 ends-by mon 3pm 19
domain, t2 ends-by fri 1pm 5
domain, t3 ends-by thu 12pm 5
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
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3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 3
domain, t1 ends-by thu 10am 16
domain, t2 ends-by wed 12pm 19
domain, t3 ends-by thu 11am 11
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 3
constraint, t1 before t3
domain, t1 ends-by fri 10am 11
domain, t3 ends-by thu 9am 15
Splitting t1 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
27}
Splitting t1 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t3 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t3 into {8, 4} and {9, 10, 11}
Splitting t3 into {8} and {4}
task, t1 1
task, t2 1
task, t3 4
domain, t2 wed
domain, t1 ends-by tue 11am 20
domain, t2 ends-by mon 1pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}

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Splitting t1 into {0} and {1}
Splitting t2 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t2 into {16} and {17, 18}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
domain, t1 ends-by tue 9am 18
domain, t2 ends-by wed 11am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 4
domain, t1 mon
domain, t2 ends-by tue 9am 19
domain, t3 ends-by fri 1pm 14
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 4
task, t3 2
domain, t1 ends-by thu 4pm 16
domain, t2 ends-by fri 4pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
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Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 3
constraint, t1 after t3
domain, t2 tue
domain, t1 ends-by mon 1pm 13
domain, t3 ends-by thu 4pm 10
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t2 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t2 into {8} and {9, 10}
task, t1 1
task, t2 4
task, t3 2
constraint, t2 after t3
domain, t1 tue
domain, t2 ends-by thu 11am 13
domain, t3 ends-by mon 10am 12
Splitting t1 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t2 into {32, 33} and {2, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 2
constraint, t1 after t2
domain, t1 tue
domain, t1 ends-by thu 2pm 5
domain, t2 ends-by wed 3pm 12
domain, t3 ends-by tue 4pm 14
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}

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task, t1 4
task, t2 3
task, t3 2
constraint, t1 before t2
domain, t1 ends-by mon 3pm 9
domain, t2 ends-by mon 2pm 10
Splitting t1 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
27}
Splitting t1 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 1
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 9am 17
domain, t3 ends-by mon 1pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 2
task, t3 4
domain, t3 thu
domain, t1 ends-by tue 2pm 18
domain, t2 ends-by wed 2pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
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Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
task, t1 3
task, t2 1
task, t3 2
domain, t2 fri
domain, t1 ends-by wed 1pm 16
domain, t2 ends-by mon 2pm 9
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 3
constraint, t2 before t3
domain, t1 ends-by fri 9am 6
domain, t2 ends-by thu 4pm 13
domain, t3 ends-by wed 12pm 10
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t3 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t3 into {8, 4} and {9, 10, 11}
Splitting t3 into {8} and {4}
task, t1 2
task, t2 2
task, t3 1
constraint, t1 same-day t3
domain, t1 thu
domain, t1 ends-by wed 11am 12
domain, t2 ends-by tue 1pm 13
domain, t3 ends-by mon 10am 5
Splitting t1 into {24, 25, 26} and {27, 28, 29}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25, 26} and {27, 28, 29, 30}
```

Splitting t3 into {24} and {25, 26}
task, t1 4
task, t2 2
task, t3 3
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 after t3
domain, t3 wed
domain, t1 ends-by tue 9am 12
domain, t2 ends-by fri 10am 5
domain, t3 ends-by mon 4pm 5
Splitting t1 into {32, 33, 19} and {24, 25, 26, 27}
Splitting t1 into {32} and {33, 19}
Splitting t2 into {36} and {37}
Splitting t3 into {16, 17} and {18, 19, 20}
Splitting t3 into {16} and {17}
task, t1 4
task, t2 2
task, t3 4
constraint, t1 before t3
domain, t3 wed
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by fri 2pm 5
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
task, t1 2
task, t2 4
task, t3 4
domain, t1 tue
domain, t1 ends-by fri 3pm 10
domain, t3 ends-by tue 9am 20
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 1
task, t3 4
domain, t3 thu
domain, t1 ends-by tue 2pm 16
domain, t3 ends-by thu 9am 6
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}

Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
task, t1 4
task, t2 2
task, t3 2
constraint, t1 after t2
domain, t1 ends-by mon 1pm 11
domain, t2 ends-by tue 11am 14
Splitting t1 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
Splitting t1 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t1 into {32, 33} and {2, 3}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 1
constraint, t1 before t3
constraint, t2 starts-at t3
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 4pm 20
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20,
24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {33, 34, 35, 4, 36, 9, 10, 11} and {12, 17, 18, 19, 20, 25, 26,
27, 28}
Splitting t2 into {33, 34, 35, 4} and {9, 10, 11, 36}
Splitting t2 into {33, 34} and {35, 4}
Splitting t2 into {33} and {34}
task, t1 3
task, t2 2
task, t3 1
constraint, t2 same-day t3
domain, t1 wed
domain, t3 fri
domain, t1 ends-by mon 3pm 9
domain, t2 ends-by tue 9am 20
domain, t3 ends-by thu 12pm 15
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}

Splitting t2 into {32, 33, 34} and {35, 36, 37}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
task, t1 3
task, t2 1
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 9am 13
domain, t2 ends-by wed 9am 8
domain, t3 ends-by thu 10am 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 1
task, t3 4
constraint, t1 before t2
domain, t1 ends-by fri 10am 13
domain, t2 ends-by thu 12pm 19
domain, t3 ends-by wed 10am 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t1 ends-by tue 10am 5
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}

Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t3 into {8, 4, 5} and {9, 10, 11}
Splitting t3 into {8} and {4, 5}
task, t1 2
task, t2 1
task, t3 4
domain, t2 mon
domain, t1 ends-by fri 3pm 14
domain, t2 ends-by wed 10am 5
domain, t3 ends-by wed 9am 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 1
task, t3 3
constraint, t1 after t3
domain, t1 ends-by fri 10am 5
domain, t2 ends-by wed 3pm 7
domain, t3 ends-by mon 4pm 18
Splitting t1 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 20, 24, 25, 26, 27, 28}
Splitting t1 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t1 into {3, 4} and {8, 9, 10}
Splitting t1 into {3} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t1 tue
domain, t3 thu
domain, t1 ends-by mon 1pm 6
domain, t2 ends-by tue 11am 12
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}

Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
task, t1 1
task, t2 3
task, t3 4
constraint, t1 same-day t2
constraint, t1 before t3
domain, t1 ends-by fri 12pm 6
domain, t2 ends-by fri 12pm 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 33, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t3 into {8, 1} and {2, 3}
Splitting t3 into {8} and {1}
task, t1 1
task, t2 1
task, t3 3
constraint, t1 after t2
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by wed 10am 16
domain, t3 ends-by mon 12pm 19
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 19}
Splitting t1 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t1 into {1, 2} and {3, 4}
Splitting t1 into {1} and {2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 1
task, t3 2
domain, t1 ends-by mon 10am 10
domain, t3 ends-by wed 9am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and

{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 2
constraint, t2 after t3
domain, t2 tue
domain, t1 ends-by tue 9am 7
domain, t2 ends-by wed 12pm 14
domain, t3 ends-by thu 2pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 2
constraint, t1 after t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 fri
domain, t3 fri
domain, t1 ends-by mon 4pm 15
domain, t2 ends-by wed 9am 12
domain, t3 ends-by wed 10am 14
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 2
constraint, t1 after t2
constraint, t2 after t3
domain, t1 ends-by fri 11am 6
domain, t2 ends-by wed 1pm 19
domain, t3 ends-by fri 4pm 18
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
task, t1 1
task, t2 1
task, t3 4
constraint, t2 before t3
domain, t2 fri
domain, t3 ends-by wed 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and

{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {33} and {34, 35}
task, t1 4
task, t2 1
task, t3 4
constraint, t1 same-day t2
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by fri 3pm 6
domain, t3 ends-by wed 3pm 10
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 2
task, t3 3
constraint, t1 after t3
domain, t1 ends-by mon 12pm 20
domain, t2 ends-by tue 11am 20
domain, t3 ends-by fri 1pm 13
Splitting t1 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t1 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t1 into {3, 4} and {8, 9, 10}
Splitting t1 into {3} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by mon 10am 15
domain, t2 ends-by thu 1pm 15
domain, t3 ends-by mon 9am 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}

```
Splitting t2 into {2, 3} and {8, 9, 4}
Splitting t2 into {2} and {3}
Splitting t3 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t3 into {2} and {3, 4}
task, t1 4
task, t2 2
task, t3 4
constraint, t2 after t3
domain, t1 ends-by fri 9am 13
domain, t3 ends-by tue 11am 13
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t2 into {8, 4, 5} and {9, 10, 11}
Splitting t2 into {8} and {4, 5}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
domain, t3 tue
domain, t2 ends-by fri 10am 19
domain, t3 ends-by fri 4pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
task, t1 4
task, t2 3
task, t3 1
constraint, t1 after t3
domain, t1 ends-by tue 11am 12
Splitting t1 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t1 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t1 into {8, 1} and {2, 3}
Splitting t1 into {8} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
```

Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 4
task, t3 3
constraint, t1 same-day t2
domain, t3 mon
domain, t2 ends-by thu 10am 20
domain, t3 ends-by fri 10am 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Task 3: with cost=10.50, without cost=10.72, improvement=2.0%
task, t1 3
task, t2 3
task, t3 4
task, t4 2
constraint, t3 same-day t4
domain, t2 thu
domain, t1 ends-by thu 9am 18
domain, t2 ends-by thu 1pm 7
domain, t3 ends-by mon 9am 17
domain, t4 ends-by fri 9am 12
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {24, 25} and {26, 27, 28}
Splitting t2 into {24} and {25}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by thu 12pm 5
domain, t3 ends-by mon 3pm 16
domain, t4 ends-by tue 1pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}

```
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {4} and {5, 6}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 2
task, t3 3
task, t4 3
constraint, t1 after t4
constraint, t2 after t3
constraint, t2 before t4
constraint, t3 after t4
domain, t1 tue
domain, t2 wed
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by thu 2pm 12
domain, t3 ends-by thu 3pm 11
domain, t4 ends-by wed 12pm 5
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t4
constraint, t2 after t3
domain, t1 ends-by mon 9am 7
domain, t3 ends-by wed 4pm 14
domain, t4 ends-by mon 9am 15
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 4
task, t4 3
constraint, t1 after t4
domain, t2 ends-by mon 9am 20
domain, t3 ends-by fri 4pm 18
domain, t4 ends-by mon 4pm 7
Splitting t1 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
```

{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t1 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t1 into {3, 4} and {5, 6}
Splitting t1 into {3} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 4
task, t3 4
task, t4 1
constraint, t1 same-day t3
constraint, t2 after t3
constraint, t3 after t4
domain, t1 ends-by tue 4pm 11
domain, t2 ends-by fri 1pm 18
domain, t4 ends-by wed 12pm 10
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {1} and {2, 3}
task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 after t2
constraint, t1 before t4
constraint, t2 starts-at t3
constraint, t2 before t4
domain, t4 thu
domain, t1 ends-by mon 11am 18
domain, t3 ends-by mon 2pm 7
domain, t4 ends-by wed 1pm 12
Splitting t1 into {8, 9, 10, 11, 12, 13, 14, 16, 17} and {18, 19, 20, 21, 22, 24,
25, 26, 27}
Splitting t1 into {8, 9, 10, 11} and {12, 13, 14, 16, 17}
Splitting t1 into {8, 9} and {10, 11}
Splitting t1 into {8} and {9}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
task, t1 1
task, t2 1
task, t3 2
task, t4 3
constraint, t1 before t2

```
constraint, t1 same-day t3
domain, t3 mon
domain, t1 ends-by mon 9am 13
domain, t2 ends-by wed 10am 12
domain, t3 ends-by tue 2pm 5
domain, t4 ends-by wed 11am 16
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t2 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t2 into {1, 2} and {3, 4}
Splitting t2 into {1} and {2}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 4
task, t4 4
domain, t1 ends-by tue 3pm 17
domain, t2 ends-by thu 1pm 17
domain, t3 ends-by thu 11am 15
domain, t4 ends-by mon 10am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 1
task, t3 2
task, t4 2
constraint, t1 same-day t2
constraint, t1 same-day t3
constraint, t2 before t3
constraint, t3 before t4
domain, t3 ends-by wed 10am 5
domain, t4 ends-by wed 2pm 7
```

Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2} and {3, 4, 5}
Splitting t3 into {1} and {2}
Splitting t4 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3 4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t4 into {3, 4, 5} and {8, 9, 10}
Splitting t4 into {3} and {4, 5}
task, t1 4
task, t2 4
task, t3 3
task, t4 3
constraint, t1 same-day t2
domain, t2 wed
domain, t4 wed
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 1pm 7
domain, t3 ends-by wed 11am 6
domain, t4 ends-by fri 12pm 6
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {16, 17} and {18, 19}
Splitting t2 into {16} and {17}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {16, 17} and {18, 19, 20}
Splitting t4 into {16} and {17}
task, t1 3
task, t2 2
task, t3 3
task, t4 1
constraint, t1 after t4
domain, t3 ends-by tue 1pm 7
domain, t4 ends-by wed 3pm 9
Splitting t1 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 36, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {1, 2, 3} and {8, 9, 4}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3 3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 2

```
task, t3 2
task, t4 1
constraint, t1 starts-at t2
constraint, t3 same-day t4
domain, t1 ends-by thu 10am 16
domain, t2 ends-by tue 2pm 12
domain, t3 ends-by wed 2pm 15
Splitting t1 into {2, 3, 4, 5, 10, 11, 12, 13, 18, 19} and {34, 35, 36, 37, 20, 2
1, 26, 27, 28, 29}
Splitting t1 into {2, 3, 4, 5, 10} and {11, 12, 13, 18, 19}
Splitting t1 into {2, 3} and {10, 4, 5}
Splitting t1 into {2} and {3}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 1
task, t4 4
constraint, t1 after t4
constraint, t2 after t3
domain, t1 ends-by thu 4pm 10
domain, t2 ends-by mon 9am 13
domain, t3 ends-by mon 2pm 13
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,
34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t2 into {1} and {2, 3}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 2
task, t3 2
task, t4 1
constraint, t1 same-day t4
constraint, t3 after t4
domain, t1 ends-by tue 10am 10
domain, t2 ends-by fri 4pm 13
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 3pm 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
```

Splitting t3 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t3 into {1} and {2, 3}
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t1 before t2
constraint, t1 after t4
domain, t1 ends-by thu 3pm 6
domain, t2 ends-by mon 11am 12
domain, t3 ends-by mon 11am 17
Splitting t1 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17}
Splitting t1 into {2, 3, 4} and {8, 9, 5}
Splitting t1 into {2} and {3, 4}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 4
task, t3 2
task, t4 3
constraint, t1 before t3
domain, t1 ends-by thu 9am 7
domain, t2 ends-by tue 10am 19
domain, t3 ends-by thu 10am 14
domain, t4 ends-by mon 12pm 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t3 into {1} and {2, 3}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}

```
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 3
task, t4 3
constraint, t1 after t4
domain, t1 ends-by tue 2pm 9
domain, t2 ends-by mon 12pm 5
domain, t3 ends-by wed 11am 7
domain, t4 ends-by tue 4pm 16
Splitting t1 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t1 into {32, 33} and {34, 3}
Splitting t1 into {34} and {3}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 2
task, t3 4
task, t4 1
constraint, t1 same-day t2
constraint, t1 same-day t3
domain, t4 thu
domain, t1 ends-by thu 10am 9
domain, t3 ends-by tue 4pm 20
domain, t4 ends-by tue 2pm 19
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t4 into {24} and {25, 26}
task, t1 1
task, t2 2
task, t3 4
task, t4 2
constraint, t2 same-day t3
constraint, t2 after t4
domain, t2 ends-by mon 11am 20
domain, t4 ends-by fri 1pm 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
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Splitting t1 into {0} and {1}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 4
task, t3 4
task, t4 1
constraint, t1 before t4
domain, t1 ends-by fri 10am 15
domain, t2 ends-by mon 4pm 8
domain, t3 ends-by wed 3pm 7
domain, t4 ends-by thu 9am 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t4 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t4 into {2, 3} and {4, 5}
Splitting t4 into {2} and {3}
task, t1 3
task, t2 3
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t4 fri
domain, t1 ends-by tue 9am 12
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by mon 3pm 16
domain, t4 ends-by wed 4pm 6
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33} and {34, 35, 36}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
```

Splitting t4 into {32, 33} and {34, 35}
Splitting t4 into {32} and {33}
task, t1 3
task, t2 1
task, t3 4
task, t4 3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 after t4
domain, t1 wed
domain, t2 ends-by thu 4pm 15
domain, t3 ends-by fri 11am 12
domain, t4 ends-by fri 2pm 7
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34, 22, 24} and {25, 26, 27, 28, 29, 30}
Splitting t2 into {32, 33} and {24, 34, 22}
Splitting t2 into {24} and {34, 22}
Splitting t3 into {32, 33, 34} and {27, 25, 26, 35}
Splitting t3 into {25, 27} and {26, 35}
Splitting t3 into {25} and {27}
Splitting t4 into {19} and {20}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
constraint, t1 before t4
constraint, t2 before t4
domain, t3 thu
domain, t1 ends-by mon 9am 14
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by wed 3pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16} and {32, 33, 34, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11, 16}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t4 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t4 into {4} and {5, 6}
task, t1 2
task, t2 1
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 before t4
domain, t1 ends-by tue 10am 12
domain, t3 ends-by fri 2pm 16
Splitting t1 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 34,

35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {1, 2, 3} and {8, 4, 5}
Splitting t1 into {1} and {2, 3}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t4 into {3, 4, 5} and {8, 9, 10}
Splitting t4 into {3} and {4, 5}
task, t1 4
task, t2 3
task, t3 1
task, t4 3
domain, t1 tue
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by fri 10am 13
domain, t3 ends-by fri 10am 14
domain, t4 ends-by thu 9am 14
Splitting t1 into {8, 9} and {10, 11}
Splitting t1 into {8} and {9}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 2
task, t4 1
constraint, t2 before t4
domain, t1 thu
domain, t1 ends-by tue 11am 6
domain, t3 ends-by wed 4pm 20
domain, t4 ends-by wed 1pm 18
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}

```
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t4 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t4 into {1, 2} and {3, 4}
Splitting t4 into {1} and {2}
task, t1 3
task, t2 1
task, t3 2
task, t4 2
constraint, t1 same-day t2
constraint, t1 after t4
constraint, t2 after t4
domain, t1 thu
domain, t1 ends-by wed 1pm 19
domain, t2 ends-by fri 1pm 12
domain, t3 ends-by thu 1pm 12
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19, 2
0, 21}
Splitting t4 into {0, 1, 2, 3} and {4, 5, 8, 9, 10}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 1
task, t3 1
task, t4 4
domain, t1 ends-by tue 2pm 14
domain, t2 ends-by tue 4pm 16
domain, t3 ends-by fri 1pm 11
domain, t4 ends-by mon 9am 15
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
```

8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 before t3
constraint, t3 same-day t4
domain, t3 fri
domain, t1 ends-by tue 9am 12
domain, t2 ends-by tue 1pm 17
domain, t3 ends-by fri 12pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 33, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33} and {34, 35}
Splitting t3 into {32} and {33}
Splitting t4 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t4 into {32} and {33, 34}
task, t1 4
task, t2 2
task, t3 1
task, t4 3
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 after t3
domain, t3 wed
domain, t2 ends-by fri 11am 15
domain, t3 ends-by thu 3pm 7
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34, 35, 36, 37, 17, 18} and {19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {32, 33, 34, 35} and {17, 18, 36, 37}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t3 into {16} and {17, 18}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 2
task, t4 2
domain, t1 ends-by fri 10am 6

```
domain, t2 ends-by fri 1pm 5
domain, t3 ends-by mon 3pm 11
domain, t4 ends-by wed 4pm 17
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t4 wed
domain, t1 ends-by wed 3pm 15
domain, t2 ends-by thu 9am 5
domain, t3 ends-by thu 3pm 17
domain, t4 ends-by fri 1pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t4 into {16} and {17, 18}
task, t1 1
task, t2 3
task, t3 1
task, t4 3
constraint, t1 same-day t2
constraint, t3 starts-at t4
domain, t2 mon
domain, t3 tue
domain, t1 ends-by tue 3pm 11
domain, t2 ends-by wed 10am 9
domain, t3 ends-by mon 4pm 8
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
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Splitting t3 into {11, 12} and {13, 14}
Splitting t3 into {11} and {12}
task, t1 2
task, t2 2
task, t3 1
task, t4 4
constraint, t3 after t4
domain, t3 tue
domain, t1 ends-by fri 12pm 6
domain, t3 ends-by wed 3pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 4
task, t4 3
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t3 after t4
domain, t1 ends-by wed 4pm 8
domain, t2 ends-by fri 4pm 17
domain, t4 ends-by wed 12pm 20
Splitting t1 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t1 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
task, t1 2
task, t2 1
task, t3 2
task, t4 4
constraint, t3 before t4
domain, t1 ends-by fri 9am 18
domain, t2 ends-by wed 9am 13
domain, t3 ends-by mon 10am 8
domain, t4 ends-by tue 12pm 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
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Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 1
8, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
Splitting t4 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t4 into {32, 33} and {2, 3}
Splitting t4 into {2} and {3}
task, t1 4
task, t2 2
task, t3 3
task, t4 2
constraint, t1 after t2
domain, t1 wed
domain, t4 ends-by mon 3pm 14
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 3
task, t4 4
constraint, t3 same-day t4
domain, t1 ends-by thu 2pm 6
domain, t3 ends-by mon 12pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 2
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task, t3 3
task, t4 1
constraint, t1 same-day t3
constraint, t2 starts-at t3
constraint, t2 before t4
domain, t1 ends-by fri 12pm 14
domain, t3 ends-by tue 1pm 6
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3} and {4, 5}
Splitting t4 into {5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {3
2, 33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {5, 6, 8, 9, 10, 11, 12} and {13, 14, 16, 17, 18, 19, 20, 21}
Splitting t4 into {8, 5, 6} and {9, 10, 11, 12}
Splitting t4 into {8} and {5, 6}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
constraint, t1 same-day t2
constraint, t2 before t3
domain, t2 fri
domain, t4 tue
domain, t1 ends-by fri 4pm 8
domain, t2 ends-by fri 9am 8
domain, t3 ends-by tue 11am 20
domain, t4 ends-by wed 12pm 9
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {32} and {33}
Splitting t3 into {36} and {37}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 4
task, t2 1
task, t3 1
task, t4 4
constraint, t3 before t4
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by fri 12pm 5
domain, t4 ends-by thu 1pm 11
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
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Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
task, t1 3
task, t2 4
task, t3 4
task, t4 1
constraint, t1 before t2
constraint, t2 after t3
domain, t2 wed
domain, t4 tue
domain, t1 ends-by thu 9am 10
domain, t2 ends-by tue 3pm 12
domain, t3 ends-by mon 10am 14
domain, t4 ends-by tue 12pm 12
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {16, 17} and {18, 19}
Splitting t2 into {16} and {17}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 4
task, t2 3
task, t3 2
task, t4 1
constraint, t1 before t2
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t3
domain, t2 fri
domain, t2 ends-by thu 11am 12
domain, t3 ends-by thu 9am 9
domain, t4 ends-by thu 10am 19
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 1
constraint, t2 after t4
domain, t1 ends-by fri 2pm 6
domain, t4 ends-by wed 11am 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
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Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 2
task, t3 4
task, t4 1
constraint, t1 before t3
constraint, t1 after t4
domain, t2 thu
domain, t2 ends-by wed 1pm 13
domain, t3 ends-by mon 9am 11
domain, t4 ends-by mon 3pm 7
Splitting t1 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 18,
19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16}
Splitting t1 into {1, 2, 3} and {8, 4, 5}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t3 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t3 into {32, 33} and {34, 3}
Splitting t3 into {34} and {3}
task, t1 3
task, t2 2
task, t3 4
task, t4 3
constraint, t1 after t3
domain, t1 ends-by wed 3pm 6
domain, t3 ends-by wed 12pm 10
domain, t4 ends-by mon 4pm 12
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 4
task, t4 4
constraint, t1 after t3
constraint, t2 before t4
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 9am 8
domain, t3 ends-by fri 11am 11
domain, t4 ends-by tue 11am 9
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Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
task, t1 2
task, t2 3
task, t3 2
task, t4 1
constraint, t1 after t4
constraint, t2 starts-at t4
domain, t2 tue
domain, t1 ends-by thu 9am 13
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by wed 12pm 14
Splitting t1 into {9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34, 3
5, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t1 into {9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t1 into {9, 10} and {11, 12, 13}
Splitting t1 into {9} and {10}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t1 ends-by wed 1pm 15
domain, t2 ends-by wed 11am 5
domain, t3 ends-by tue 1pm 11
domain, t4 ends-by fri 10am 8
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
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Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t4
constraint, t3 same-day t4
domain, t1 ends-by tue 9am 10
domain, t2 ends-by fri 12pm 19
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by wed 11am 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20,
24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 2
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 same-day t3
domain, t2 thu
domain, t2 ends-by thu 11am 6
domain, t3 ends-by tue 12pm 20
domain, t4 ends-by tue 12pm 6
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t1 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t1 into {1, 2} and {3, 4}
Splitting t1 into {1} and {2}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t3 into {24} and {25, 26}
task, t1 2
task, t2 4
task, t3 3
task, t4 1
constraint, t1 before t2
constraint, t2 before t3
constraint, t2 after t4
domain, t3 fri
domain, t1 ends-by mon 1pm 7
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domain, t2 ends-by wed 10am 7
domain, t3 ends-by wed 11am 16
domain, t4 ends-by mon 11am 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {32} and {2, 3}
Splitting t2 into {2} and {3}
Splitting t3 into {32, 33} and {34, 35, 36}
Splitting t3 into {32} and {33}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 2
task, t3 4
task, t4 3
constraint, t2 after t4
domain, t1 ends-by fri 3pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 1pm 8
domain, t4 ends-by mon 10am 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {3, 4, 5} and {8, 9, 10}
Splitting t2 into {3} and {4, 5}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 3
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t1 fri
domain, t1 ends-by mon 3pm 13
domain, t3 ends-by thu 1pm 10
domain, t4 ends-by tue 4pm 17
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
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Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 2
task, t3 3
task, t4 1
domain, t3 tue
domain, t4 fri
domain, t2 ends-by fri 9am 13
domain, t4 ends-by tue 2pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
Splitting t4 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t4 into {32} and {33, 34}
task, t1 4
task, t2 1
task, t3 1
task, t4 4
constraint, t1 after t2
constraint, t2 same-day t3
domain, t4 mon
domain, t2 ends-by thu 12pm 17
domain, t3 ends-by mon 2pm 17
Splitting t1 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t1 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t1 into {8, 1} and {2, 3}
Splitting t1 into {8} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 3
task, t4 3
domain, t2 mon
domain, t4 mon
domain, t1 ends-by wed 1pm 18
domain, t2 ends-by wed 12pm 16
domain, t3 ends-by wed 1pm 10
domain, t4 ends-by mon 2pm 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}

```
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 2
task, t2 3
task, t3 1
task, t4 4
constraint, t1 before t3
constraint, t1 starts-at t4
domain, t3 fri
domain, t1 ends-by wed 11am 7
domain, t2 ends-by wed 1pm 18
domain, t3 ends-by mon 4pm 5
domain, t4 ends-by thu 1pm 16
Splitting t1 into {12, 4, 5, 36} and {13, 20, 21, 28, 29}
Splitting t1 into {12, 4} and {36, 5}
Splitting t1 into {12} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
task, t1 3
task, t2 4
task, t3 2
task, t4 1
constraint, t1 after t3
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t3 starts-at t4
domain, t3 fri
domain, t1 ends-by tue 3pm 8
domain, t2 ends-by wed 1pm 5
domain, t3 ends-by fri 9am 12
domain, t4 ends-by thu 3pm 5
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 4
task, t4 2
constraint, t3 same-day t4
domain, t2 thu
domain, t1 ends-by thu 9am 18
domain, t2 ends-by thu 1pm 7
domain, t3 ends-by mon 9am 17
domain, t4 ends-by fri 9am 12
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
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Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {24, 25} and {26, 27, 28}
Splitting t2 into {24} and {25}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by thu 12pm 5
domain, t3 ends-by mon 3pm 16
domain, t4 ends-by tue 1pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {4} and {5, 6}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 2
task, t3 3
task, t4 3
constraint, t1 after t4
constraint, t2 after t3
constraint, t2 before t4
constraint, t3 after t4
domain, t1 tue
domain, t2 wed
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by thu 2pm 12
domain, t3 ends-by thu 3pm 11
domain, t4 ends-by wed 12pm 5
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t4
constraint, t2 after t3
domain, t1 ends-by mon 9am 7
domain, t3 ends-by wed 4pm 14
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```
domain, t4 ends-by mon 9am 15
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 4
task, t4 3
constraint, t1 after t4
domain, t2 ends-by mon 9am 20
domain, t3 ends-by fri 4pm 18
domain, t4 ends-by mon 4pm 7
Splitting t1 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t1 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t1 into {3, 4} and {5, 6}
Splitting t1 into {3} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 4
task, t3 4
task, t4 1
constraint, t1 same-day t3
constraint, t2 after t3
constraint, t3 after t4
domain, t1 ends-by tue 4pm 11
domain, t2 ends-by fri 1pm 18
domain, t4 ends-by wed 12pm 10
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {1} and {2, 3}
```

task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 after t2
constraint, t1 before t4
constraint, t2 starts-at t3
constraint, t2 before t4
domain, t4 thu
domain, t1 ends-by mon 11am 18
domain, t3 ends-by mon 2pm 7
domain, t4 ends-by wed 1pm 12
Splitting t1 into {8, 9, 10, 11, 12, 13, 14, 16, 17} and {18, 19, 20, 21, 22, 24, 25, 26, 27}
Splitting t1 into {8, 9, 10, 11} and {12, 13, 14, 16, 17}
Splitting t1 into {8, 9} and {10, 11}
Splitting t1 into {8} and {9}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
task, t1 1
task, t2 1
task, t3 2
task, t4 3
constraint, t1 before t2
constraint, t1 same-day t3
domain, t3 mon
domain, t1 ends-by mon 9am 13
domain, t2 ends-by wed 10am 12
domain, t3 ends-by tue 2pm 5
domain, t4 ends-by wed 11am 16
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 19}
Splitting t2 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t2 into {1, 2} and {3, 4}
Splitting t2 into {1} and {2}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 4
task, t4 4
domain, t1 ends-by tue 3pm 17
domain, t2 ends-by thu 1pm 17
domain, t3 ends-by thu 11am 15
domain, t4 ends-by mon 10am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3

3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 1
task, t3 2
task, t4 2
constraint, t1 same-day t2
constraint, t1 same-day t3
constraint, t2 before t3
constraint, t3 before t4
domain, t3 ends-by wed 10am 5
domain, t4 ends-by wed 2pm 7
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2} and {3, 4, 5}
Splitting t3 into {1} and {2}
Splitting t4 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3 4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t4 into {3, 4, 5} and {8, 9, 10}
Splitting t4 into {3} and {4, 5}
task, t1 4
task, t2 4
task, t3 3
task, t4 3
constraint, t1 same-day t2
domain, t2 wed
domain, t4 wed
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 1pm 7
domain, t3 ends-by wed 11am 6
domain, t4 ends-by fri 12pm 6
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {16, 17} and {18, 19}
Splitting t2 into {16} and {17}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {16, 17} and {18, 19, 20}
Splitting t4 into {16} and {17}

task, t1 3
task, t2 2
task, t3 3
task, t4 1
constraint, t1 after t4
domain, t3 ends-by tue 1pm 7
domain, t4 ends-by wed 3pm 9
Splitting t1 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 36, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {1, 2, 3} and {8, 9, 4}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 2
task, t4 1
constraint, t1 starts-at t2
constraint, t3 same-day t4
domain, t1 ends-by thu 10am 16
domain, t2 ends-by tue 2pm 12
domain, t3 ends-by wed 2pm 15
Splitting t1 into {2, 3, 4, 5, 10, 11, 12, 13, 18, 19} and {34, 35, 36, 37, 20, 21, 26, 27, 28, 29}
Splitting t1 into {2, 3, 4, 5, 10} and {11, 12, 13, 18, 19}
Splitting t1 into {2, 3} and {10, 4, 5}
Splitting t1 into {2} and {3}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 1
task, t4 4
constraint, t1 after t4
constraint, t2 after t3
domain, t1 ends-by thu 4pm 10
domain, t2 ends-by mon 9am 13
domain, t3 ends-by mon 2pm 13
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}

Splitting t2 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t2 into {1} and {2, 3}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 2
task, t3 2
task, t4 1
constraint, t1 same-day t4
constraint, t3 after t4
domain, t1 ends-by tue 10am 10
domain, t2 ends-by fri 4pm 13
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 3pm 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t3 into {1} and {2, 3}
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t1 before t2
constraint, t1 after t4
domain, t1 ends-by thu 3pm 6
domain, t2 ends-by mon 11am 12
domain, t3 ends-by mon 11am 17
Splitting t1 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17}
Splitting t1 into {2, 3, 4} and {8, 9, 5}
Splitting t1 into {2} and {3, 4}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 4
task, t3 2
task, t4 3
constraint, t1 before t3

```
domain, t1 ends-by thu 9am 7
domain, t2 ends-by tue 10am 19
domain, t3 ends-by thu 10am 14
domain, t4 ends-by mon 12pm 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {3
2, 33, 34, 35, 36, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,
34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t3 into {1} and {2, 3}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 3
task, t4 3
constraint, t1 after t4
domain, t1 ends-by tue 2pm 9
domain, t2 ends-by mon 12pm 5
domain, t3 ends-by wed 11am 7
domain, t4 ends-by tue 4pm 16
Splitting t1 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t1 into {32, 33} and {34, 3}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {16, 17, 18, 19, 20, 24,
25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 2
task, t3 4
task, t4 1
constraint, t1 same-day t2
constraint, t1 same-day t3
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domain, t4 thu
domain, t1 ends-by thu 10am 9
domain, t3 ends-by tue 4pm 20
domain, t4 ends-by tue 2pm 19
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t4 into {24} and {25, 26}
task, t1 1
task, t2 2
task, t3 4
task, t4 2
constraint, t2 same-day t3
constraint, t2 after t4
domain, t2 ends-by mon 11am 20
domain, t4 ends-by fri 1pm 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 4
task, t3 4
task, t4 1
constraint, t1 before t4
domain, t1 ends-by fri 10am 15
domain, t2 ends-by mon 4pm 8
domain, t3 ends-by wed 3pm 7
domain, t4 ends-by thu 9am 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
```

```
Splitting t3 into {0} and {1}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t4 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t4 into {2, 3} and {4, 5}
Splitting t4 into {2} and {3}
task, t1 3
task, t2 3
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t4 fri
domain, t1 ends-by tue 9am 12
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by mon 3pm 16
domain, t4 ends-by wed 4pm 6
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33} and {34, 35, 36}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {32, 33} and {34, 35}
Splitting t4 into {32} and {33}
task, t1 3
task, t2 1
task, t3 4
task, t4 3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 after t4
domain, t1 wed
domain, t2 ends-by thu 4pm 15
domain, t3 ends-by fri 11am 12
domain, t4 ends-by fri 2pm 7
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34, 22, 24} and {25, 26, 27, 28, 29, 30}
Splitting t2 into {32, 33} and {24, 34, 22}
Splitting t2 into {32} and {33}
Splitting t3 into {33} and {34, 35}
Splitting t4 into {24, 19, 20} and {25, 26, 27, 28}
Splitting t4 into {24} and {19, 20}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
constraint, t1 before t4
constraint, t2 before t4
domain, t3 thu
domain, t1 ends-by mon 9am 14
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by wed 3pm 12
```

Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16} and {32, 33, 34, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11, 16}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t4 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t4 into {4} and {5, 6}
task, t1 2
task, t2 1
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 before t4
domain, t1 ends-by tue 10am 12
domain, t3 ends-by fri 2pm 16
Splitting t1 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 34, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {1, 2, 3} and {8, 4, 5}
Splitting t1 into {1} and {2, 3}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t4 into {3, 4, 5} and {8, 9, 10}
Splitting t4 into {3} and {4, 5}
task, t1 4
task, t2 3
task, t3 1
task, t4 3
domain, t1 tue
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by fri 10am 13
domain, t3 ends-by fri 10am 14
domain, t4 ends-by thu 9am 14
Splitting t1 into {8, 9} and {10, 11}
Splitting t1 into {8} and {9}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}

Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 2
task, t4 1
constraint, t2 before t4
domain, t1 thu
domain, t1 ends-by tue 11am 6
domain, t3 ends-by wed 4pm 20
domain, t4 ends-by wed 1pm 18
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 19}
Splitting t4 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t4 into {1, 2} and {3, 4}
Splitting t4 into {1} and {2}
task, t1 3
task, t2 1
task, t3 2
task, t4 2
constraint, t1 same-day t2
constraint, t1 after t4
constraint, t2 after t4
domain, t1 thu
domain, t1 ends-by wed 1pm 19
domain, t2 ends-by fri 1pm 12
domain, t3 ends-by thu 1pm 12
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}

Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19, 2
0, 21}
Splitting t4 into {0, 1, 2, 3} and {4, 5, 8, 9, 10}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 1
task, t3 1
task, t4 4
domain, t1 ends-by tue 2pm 14
domain, t2 ends-by tue 4pm 16
domain, t3 ends-by fri 1pm 11
domain, t4 ends-by mon 9am 15
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 before t3
constraint, t3 same-day t4
domain, t3 fri
domain, t1 ends-by tue 9am 12
domain, t2 ends-by tue 1pm 17
domain, t3 ends-by fri 12pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33} and {34, 35}
Splitting t3 into {32} and {33}
Splitting t4 into {32, 33, 34} and {35, 36, 37, 38}

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Splitting t4 into {32} and {33, 34}
task, t1 4
task, t2 2
task, t3 1
task, t4 3
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 after t3
domain, t3 wed
domain, t2 ends-by fri 11am 15
domain, t3 ends-by thu 3pm 7
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34, 35, 36, 37, 17, 18} and {19, 20, 21, 24, 25, 26, 2
7, 28, 29}
Splitting t2 into {32, 33, 34, 35} and {17, 18, 36, 37}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t3 into {16} and {17, 18}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 2
task, t4 2
domain, t1 ends-by fri 10am 6
domain, t2 ends-by fri 1pm 5
domain, t3 ends-by mon 3pm 11
domain, t4 ends-by wed 4pm 17
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t4 wed
domain, t1 ends-by wed 3pm 15
domain, t2 ends-by thu 9am 5
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domain, t3 ends-by thu 3pm 17
domain, t4 ends-by fri 1pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t4 into {16} and {17, 18}
task, t1 1
task, t2 3
task, t3 1
task, t4 3
constraint, t1 same-day t2
constraint, t3 starts-at t4
domain, t2 mon
domain, t3 tue
domain, t1 ends-by tue 3pm 11
domain, t2 ends-by wed 10am 9
domain, t3 ends-by mon 4pm 8
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {11, 12} and {13, 14}
Splitting t3 into {11} and {12}
task, t1 2
task, t2 2
task, t3 1
task, t4 4
constraint, t3 after t4
domain, t3 tue
domain, t1 ends-by fri 12pm 6
domain, t3 ends-by wed 3pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 4
task, t4 3
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t3 after t4
domain, t1 ends-by wed 4pm 8
```

domain, t2 ends-by fri 4pm 17
domain, t4 ends-by wed 12pm 20
Splitting t1 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 24, 25, 26, 27, 28}
Splitting t1 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
task, t1 2
task, t2 1
task, t3 2
task, t4 4
constraint, t3 before t4
domain, t1 ends-by fri 9am 18
domain, t2 ends-by wed 9am 13
domain, t3 ends-by mon 10am 8
domain, t4 ends-by tue 12pm 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t4 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t4 into {32, 33} and {2, 3}
Splitting t4 into {32} and {33}
task, t1 4
task, t2 2
task, t3 3
task, t4 2
constraint, t1 after t2
domain, t1 wed
domain, t4 ends-by mon 3pm 14
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}

Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 3
task, t4 4
constraint, t3 same-day t4
domain, t1 ends-by thu 2pm 6
domain, t3 ends-by mon 12pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 2
task, t3 3
task, t4 1
constraint, t1 same-day t3
constraint, t2 starts-at t3
constraint, t2 before t4
domain, t1 ends-by fri 12pm 14
domain, t3 ends-by tue 1pm 6
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3} and {4, 5}
Splitting t4 into {5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {3
2, 33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {5, 6, 8, 9, 10, 11, 12} and {13, 14, 16, 17, 18, 19, 20, 21}
Splitting t4 into {8, 5, 6} and {9, 10, 11, 12}
Splitting t4 into {8} and {5, 6}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
constraint, t1 same-day t2
constraint, t2 before t3
domain, t2 fri
domain, t4 tue
domain, t1 ends-by fri 4pm 8
domain, t2 ends-by fri 9am 8
domain, t3 ends-by tue 11am 20
domain, t4 ends-by wed 12pm 9
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}

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Splitting t2 into {32} and {33}
Splitting t3 into {36} and {37}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 4
task, t2 1
task, t3 1
task, t4 4
constraint, t3 before t4
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by fri 12pm 5
domain, t4 ends-by thu 1pm 11
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
task, t1 3
task, t2 4
task, t3 4
task, t4 1
constraint, t1 before t2
constraint, t2 after t3
domain, t2 wed
domain, t4 tue
domain, t1 ends-by thu 9am 10
domain, t2 ends-by tue 3pm 12
domain, t3 ends-by mon 10am 14
domain, t4 ends-by tue 12pm 12
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {16, 17} and {18, 19}
Splitting t2 into {16} and {17}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 4
task, t2 3
task, t3 2
task, t4 1
```

```
constraint, t1 before t2
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t3
domain, t2 fri
domain, t2 ends-by thu 11am 12
domain, t3 ends-by thu 9am 9
domain, t4 ends-by thu 10am 19
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 1
constraint, t2 after t4
domain, t1 ends-by fri 2pm 6
domain, t4 ends-by wed 11am 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 2
task, t3 4
task, t4 1
constraint, t1 before t3
constraint, t1 after t4
domain, t2 thu
domain, t2 ends-by wed 1pm 13
domain, t3 ends-by mon 9am 11
domain, t4 ends-by mon 3pm 7
Splitting t1 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 18,
19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16}
Splitting t1 into {1, 2, 3} and {8, 4, 5}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t3 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t3 into {32, 33} and {34, 3}
Splitting t3 into {32} and {33}
task, t1 3
task, t2 2
task, t3 4
task, t4 3
constraint, t1 after t3
domain, t1 ends-by wed 3pm 6
domain, t3 ends-by wed 12pm 10
```

domain, t4 ends-by mon 4pm 12
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 4
task, t4 4
constraint, t1 after t3
constraint, t2 before t4
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 9am 8
domain, t3 ends-by fri 11am 11
domain, t4 ends-by tue 11am 9
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 33, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
task, t1 2
task, t2 3
task, t3 2
task, t4 1
constraint, t1 after t4
constraint, t2 starts-at t4
domain, t2 tue
domain, t1 ends-by thu 9am 13
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by wed 12pm 14
Splitting t1 into {9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34, 35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t1 into {9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t1 into {9, 10} and {11, 12, 13}
Splitting t1 into {9} and {10}

Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t1 ends-by wed 1pm 15
domain, t2 ends-by wed 11am 5
domain, t3 ends-by tue 1pm 11
domain, t4 ends-by fri 10am 8
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t4
constraint, t3 same-day t4
domain, t1 ends-by tue 9am 10
domain, t2 ends-by fri 12pm 19
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by wed 11am 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20,
24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 2

```
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 same-day t3
domain, t2 thu
domain, t2 ends-by thu 11am 6
domain, t3 ends-by tue 12pm 20
domain, t4 ends-by tue 12pm 6
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t1 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t1 into {1, 2} and {3, 4}
Splitting t1 into {1} and {2}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t3 into {24} and {25, 26}
task, t1 2
task, t2 4
task, t3 3
task, t4 1
constraint, t1 before t2
constraint, t2 before t3
constraint, t2 after t4
domain, t3 fri
domain, t1 ends-by mon 1pm 7
domain, t2 ends-by wed 10am 7
domain, t3 ends-by wed 11am 16
domain, t4 ends-by mon 11am 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {32} and {2, 3}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14} and {16, 17, 1
8, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 2
task, t3 4
task, t4 3
constraint, t2 after t4
domain, t1 ends-by fri 3pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 1pm 8
domain, t4 ends-by mon 10am 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
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Splitting t2 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {3, 4, 5} and {8, 9, 10}
Splitting t2 into {3} and {4, 5}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 3
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t1 fri
domain, t1 ends-by mon 3pm 13
domain, t3 ends-by thu 1pm 10
domain, t4 ends-by tue 4pm 17
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 2
task, t3 3
task, t4 1
domain, t3 tue
domain, t4 fri
domain, t2 ends-by fri 9am 13
domain, t4 ends-by tue 2pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
Splitting t4 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t4 into {32} and {33, 34}
task, t1 4
task, t2 1
task, t3 1

```
task, t4 4
constraint, t1 after t2
constraint, t2 same-day t3
domain, t4 mon
domain, t2 ends-by thu 12pm 17
domain, t3 ends-by mon 2pm 17
Splitting t1 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t1 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t1 into {8, 1} and {2, 3}
Splitting t1 into {8} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 3
task, t4 3
domain, t2 mon
domain, t4 mon
domain, t1 ends-by wed 1pm 18
domain, t2 ends-by wed 12pm 16
domain, t3 ends-by wed 1pm 10
domain, t4 ends-by mon 2pm 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 2
task, t2 3
task, t3 1
task, t4 4
constraint, t1 before t3
constraint, t1 starts-at t4
domain, t3 fri
domain, t1 ends-by wed 11am 7
domain, t2 ends-by wed 1pm 18
domain, t3 ends-by mon 4pm 5
domain, t4 ends-by thu 1pm 16
Splitting t1 into {12, 4, 5, 36} and {13, 20, 21, 28, 29}
Splitting t1 into {12, 4} and {36, 5}
Splitting t1 into {12} and {4}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
```

```
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
task, t1 3
task, t2 4
task, t3 2
task, t4 1
constraint, t1 after t3
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t3 starts-at t4
domain, t3 fri
domain, t1 ends-by tue 3pm 8
domain, t2 ends-by wed 1pm 5
domain, t3 ends-by fri 9am 12
domain, t4 ends-by thu 3pm 5
No (more) solutions. Total of 1 paths expanded.
Task 4: with cost=12.38, without cost=12.43, improvement=0.4%
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
constraint, t3 after t5
domain, t3 wed
domain, t2 ends-by thu 9am 20
domain, t3 ends-by mon 11am 18
domain, t5 ends-by thu 3pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
task, t1 3
task, t2 4
task, t3 1
task, t4 1
task, t5 2
constraint, t1 before t3
constraint, t2 after t4
constraint, t3 starts-at t4
domain, t5 mon
domain, t2 ends-by wed 12pm 18
domain, t3 ends-by mon 9am 20
domain, t4 ends-by tue 10am 20
domain, t5 ends-by fri 1pm 11
```

Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t2 into {32, 33} and {34, 3}
Splitting t2 into {34} and {3}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 1
task, t4 3
task, t5 2
constraint, t4 after t5
domain, t1 fri
domain, t3 ends-by wed 9am 8
domain, t4 ends-by thu 10am 10
domain, t5 ends-by wed 2pm 18
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 36, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t4 into {2, 3} and {8, 9, 4}
Splitting t4 into {2} and {3}
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t2 after t3
constraint, t2 after t4
constraint, t2 same-day t5
domain, t1 ends-by thu 9am 5
domain, t2 ends-by thu 11am 14
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,

20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {8, 9, 10} and {11, 12, 13}
Splitting t5 into {8} and {9, 10}
task, t1 3
task, t2 3
task, t3 4
task, t4 4
task, t5 2
constraint, t1 before t2
constraint, t1 same-day t3
domain, t5 fri
domain, t1 ends-by thu 1pm 18
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by thu 12pm 7
domain, t5 ends-by tue 9am 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {32, 33, 34} and {35, 36, 37}
Splitting t5 into {32} and {33, 34}
task, t1 3
task, t2 1
task, t3 3
task, t4 3
task, t5 4
constraint, t1 starts-at t4
constraint, t3 before t5
domain, t5 thu
domain, t1 ends-by fri 12pm 20
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by fri 4pm 16
domain, t4 ends-by fri 9am 15
domain, t5 ends-by mon 11am 6
Splitting t1 into {35, 3, 4, 36, 11} and {12, 19, 20, 27, 28}
Splitting t1 into {3, 35} and {11, 4, 36}
Splitting t1 into {3} and {35}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1

8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19, 20, 24}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {24, 25} and {26, 27}
Splitting t5 into {24} and {25}
task, t1 3
task, t2 4
task, t3 1
task, t4 4
task, t5 1
constraint, t1 before t2
constraint, t1 before t4
constraint, t1 before t5
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t4 mon
domain, t1 ends-by wed 11am 13
domain, t2 ends-by fri 4pm 9
domain, t4 ends-by tue 12pm 10
domain, t5 ends-by mon 3pm 9
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 3
constraint, t2 after t3
domain, t1 fri
domain, t3 thu
domain, t1 ends-by mon 4pm 15
domain, t2 ends-by wed 9am 16
domain, t3 ends-by thu 3pm 6
domain, t4 ends-by tue 11am 15
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {32, 33, 34} and {35, 36, 28}
Splitting t2 into {35} and {36, 28}
Splitting t2 into {36} and {28}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 3

```
task, t3 3
task, t4 2
task, t5 3
constraint, t2 after t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 before t5
domain, t2 mon
domain, t5 mon
domain, t1 ends-by thu 11am 11
domain, t2 ends-by fri 9am 12
domain, t3 ends-by thu 10am 16
domain, t4 ends-by fri 3pm 10
domain, t5 ends-by fri 9am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
... t1 in {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} has no solu
tion
... t1 in {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 3
0} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 1
task, t3 2
task, t4 1
task, t5 2
constraint, t1 before t2
constraint, t2 after t5
constraint, t3 before t4
domain, t1 wed
domain, t2 fri
domain, t1 ends-by fri 10am 19
domain, t2 ends-by fri 2pm 11
domain, t3 ends-by mon 2pm 5
domain, t5 ends-by thu 4pm 13
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t4 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t4 into {2, 3} and {4, 5}
Splitting t4 into {2} and {3}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 3
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constraint, t1 before t3
domain, t5 wed
domain, t1 ends-by wed 11am 11
domain, t3 ends-by thu 2pm 5
domain, t5 ends-by wed 9am 5
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t3 into {8, 4, 5} and {9, 10, 11}
Splitting t3 into {8} and {4, 5}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {16, 17} and {18, 19, 20}
Splitting t5 into {16} and {17}
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t3 before t4
constraint, t3 before t5
domain, t2 fri
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by mon 10am 17
domain, t3 ends-by fri 4pm 14
domain, t4 ends-by thu 12pm 11
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 4
task, t3 4
task, t4 1
task, t5 4
constraint, t1 after t2
constraint, t2 before t4
domain, t1 ends-by wed 3pm 18
domain, t3 ends-by wed 1pm 12
domain, t4 ends-by thu 3pm 13
domain, t5 ends-by tue 11am 5
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
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Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t4 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t4 into {4} and {5, 6}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 4
constraint, t1 before t4
constraint, t3 same-day t4
domain, t1 ends-by mon 2pm 11
domain, t3 ends-by wed 11am 6
domain, t4 ends-by tue 3pm 6
domain, t5 ends-by tue 4pm 10
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t3 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
Splitting t4 into {8, 9} and {10, 11}
Splitting t4 into {8} and {9}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t5
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t1 thu
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domain, t1 ends-by tue 9am 10
domain, t2 ends-by mon 10am 20
domain, t3 ends-by mon 4pm 18
domain, t4 ends-by tue 3pm 7
domain, t5 ends-by fri 2pm 19
Splitting t1 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {32,
33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {6, 8, 9, 10, 11, 12, 13} and {14, 16, 17, 18, 19, 20, 21}
Splitting t2 into {8, 9, 6} and {10, 11, 12, 13}
Splitting t2 into {8} and {9, 6}
Splitting t2 into {9} and {6}
Splitting t4 into {3, 4} and {5, 6}
Splitting t4 into {3} and {4}
task, t1 1
task, t2 2
task, t3 2
task, t4 1
task, t5 1
domain, t1 thu
domain, t3 thu
domain, t1 ends-by wed 11am 11
domain, t2 ends-by tue 9am 9
domain, t4 ends-by mon 2pm 9
domain, t5 ends-by mon 12pm 19
Splitting t1 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 4
task, t3 2
task, t4 2
task, t5 1
constraint, t2 same-day t5
domain, t1 thu
domain, t2 ends-by fri 11am 11
domain, t3 ends-by wed 11am 7
domain, t4 ends-by wed 4pm 15
Splitting t1 into {24, 25, 26} and {27, 28, 29}
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Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t2
constraint, t2 after t4
domain, t2 tue
domain, t2 ends-by tue 2pm 9
domain, t3 ends-by tue 10am 17
domain, t4 ends-by thu 1pm 7
domain, t5 ends-by thu 9am 16
Splitting t1 into {10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 24} and {32, 33, 34, 3
5, 36, 37, 25, 26, 27, 28, 29}
Splitting t1 into {10, 11, 12, 13, 16} and {17, 18, 19, 20, 21, 24}
Splitting t1 into {10, 11} and {16, 12, 13}
Splitting t1 into {10} and {11}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t4 same-day t5
domain, t2 tue
domain, t4 mon
domain, t4 ends-by fri 4pm 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
```

Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9, 10} and {11, 12, 13}
Splitting t2 into {8} and {9, 10}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by thu 11am 20
domain, t2 ends-by fri 10am 10
domain, t3 ends-by thu 1pm 19
domain, t5 ends-by tue 9am 15
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34, 35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t3 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t3 into {8, 9, 10} and {11, 12, 13}
Splitting t3 into {8} and {9, 10}
task, t1 2
task, t2 1
task, t3 2
task, t4 4
task, t5 4
constraint, t1 same-day t2
constraint, t2 before t4
constraint, t3 same-day t5
domain, t1 ends-by fri 1pm 14
domain, t2 ends-by mon 12pm 8
domain, t3 ends-by thu 3pm 16
domain, t4 ends-by fri 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3

3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t2 same-day t3
domain, t1 tue
domain, t3 fri
domain, t4 tue
domain, t2 ends-by mon 10am 13
domain, t3 ends-by wed 1pm 6
domain, t4 ends-by fri 10am 13
domain, t5 ends-by mon 2pm 13
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {32, 33, 34} and {35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {8, 9} and {10, 11, 12}
Splitting t4 into {8} and {9}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 2
task, t3 3
task, t4 4
task, t5 3
constraint, t1 before t4
constraint, t1 before t5
constraint, t3 starts-at t5
constraint, t4 same-day t5
domain, t1 ends-by thu 9am 17
domain, t3 ends-by thu 2pm 13
domain, t4 ends-by thu 12pm 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {11, 35, 36, 12} and {27, 19, 20, 28}

Splitting t3 into {35, 11} and {36, 12}
Splitting t3 into {35} and {11}
Splitting t4 into {8, 9} and {10, 11}
Splitting t4 into {8} and {9}
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 3
constraint, t1 before t2
constraint, t3 same-day t4
domain, t4 mon
domain, t5 wed
domain, t1 ends-by thu 3pm 6
domain, t3 ends-by tue 3pm 5
domain, t4 ends-by wed 10am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {16, 17} and {18, 19, 20}
Splitting t5 into {16} and {17}
task, t1 3
task, t2 1
task, t3 1
task, t4 3
task, t5 2
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t2 fri
domain, t1 ends-by thu 3pm 9
domain, t2 ends-by wed 9am 18
domain, t4 ends-by mon 12pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 34, 17, 18,
19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {32, 33} and {34, 35, 36}
Splitting t4 into {32} and {33}
Splitting t5 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {3, 4, 5} and {8, 9, 10}
Splitting t5 into {3} and {4, 5}

```
task, t1 1
task, t2 4
task, t3 1
task, t4 1
task, t5 3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 20
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by tue 11am 7
domain, t4 ends-by mon 1pm 11
domain, t5 ends-by mon 3pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16} and {32, 33, 34, 17, 18, 19, 24,
25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11, 16}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t3 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t3 into {4} and {5, 6}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t4 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t4 into {4} and {5, 6}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 4
task, t4 1
task, t5 4
constraint, t1 same-day t5
domain, t3 thu
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 11am 9
domain, t4 ends-by fri 9am 20
domain, t5 ends-by tue 1pm 10
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
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Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 1
task, t3 4
task, t4 2
task, t5 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 before t5
domain, t1 fri
domain, t3 mon
domain, t1 ends-by tue 1pm 9
domain, t2 ends-by tue 4pm 11
domain, t3 ends-by tue 12pm 7
domain, t4 ends-by mon 9am 12
domain, t5 ends-by wed 12pm 10
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
... t4 in {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} has no solution
... t4 in {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29} has no sol
ution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 1
task, t4 1
task, t5 3
constraint, t1 after t5
constraint, t2 before t4
constraint, t2 after t5
domain, t5 fri
domain, t1 ends-by wed 11am 11
domain, t3 ends-by thu 2pm 11
domain, t4 ends-by wed 3pm 18
domain, t5 ends-by tue 2pm 8
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
... t3 in {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} has no solu
tion
... t3 in {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 3
0} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t1 starts-at t2
constraint, t1 same-day t3
```

constraint, t1 same-day t4
constraint, t3 after t5
domain, t2 fri
domain, t5 fri
domain, t2 ends-by tue 1pm 19
domain, t3 ends-by mon 1pm 20
domain, t5 ends-by tue 3pm 13
Splitting t1 into {35} and {36}
Splitting t3 into {35, 36} and {37, 38}
Splitting t3 into {35} and {36}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 2
constraint, t1 before t2
domain, t1 ends-by wed 12pm 5
domain, t2 ends-by thu 10am 14
domain, t3 ends-by fri 12pm 20
domain, t4 ends-by tue 12pm 6
domain, t5 ends-by tue 3pm 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 starts-at t5
domain, t3 wed
domain, t4 tue
domain, t1 ends-by wed 2pm 9

```
domain, t2 ends-by wed 1pm 7
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by wed 11am 9
Splitting t1 into {12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24} and {32, 33, 34, 3
5, 36, 37, 25, 26, 27, 28, 29, 30}
Splitting t1 into {12, 13, 14, 16, 17} and {18, 19, 20, 21, 22, 24}
Splitting t1 into {12, 13} and {16, 17, 14}
Splitting t1 into {12} and {13}
Splitting t2 into {13, 14, 16, 17, 18, 19, 20, 21, 22, 24, 25} and {32, 33, 34, 3
5, 36, 37, 38, 26, 27, 28, 29, 30}
Splitting t2 into {13, 14, 16, 17, 18} and {19, 20, 21, 22, 24, 25}
Splitting t2 into {13, 14} and {16, 17, 18}
Splitting t2 into {13} and {14}
Splitting t3 into {20} and {21, 22}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
task, t5 1
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t3 after t4
constraint, t4 same-day t5
domain, t1 thu
domain, t1 ends-by thu 3pm 14
domain, t2 ends-by tue 11am 20
domain, t3 ends-by tue 3pm 20
domain, t4 ends-by thu 1pm 8
domain, t5 ends-by tue 4pm 19
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
... t2 in {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} has no solution
... t2 in {32, 33, 34, 35, 18, 19, 24, 25, 26, 27} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 2
task, t4 2
task, t5 4
constraint, t1 before t2
constraint, t3 starts-at t5
domain, t4 fri
domain, t1 ends-by tue 3pm 17
domain, t2 ends-by fri 4pm 10
domain, t3 ends-by thu 10am 12
domain, t4 ends-by wed 2pm 20
domain, t5 ends-by tue 10am 14
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {4, 37, 5, 36, 12} and {13, 20, 21, 28, 29}
Splitting t3 into {4, 37} and {12, 36, 5}
Splitting t3 into {4} and {37}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
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```
Splitting t4 into {32} and {33, 34}
task, t1 3
task, t2 3
task, t3 3
task, t4 2
task, t5 1
constraint, t2 before t3
constraint, t4 before t5
domain, t1 thu
domain, t5 wed
domain, t2 ends-by mon 9am 10
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t3 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t3 into {3, 4} and {8, 9, 10}
Splitting t3 into {3} and {4}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18, 19, 2
0}
Splitting t4 into {0, 1, 2, 3} and {8, 9, 4, 5}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t5 into {16} and {17, 18}
task, t1 4
task, t2 2
task, t3 1
task, t4 4
task, t5 1
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t4 after t5
domain, t4 wed
domain, t1 ends-by wed 9am 8
domain, t3 ends-by mon 11am 6
domain, t4 ends-by fri 3pm 5
domain, t5 ends-by thu 10am 18
Splitting t1 into {1, 2} and {8, 9, 3}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {16, 17} and {18, 19}
Splitting t4 into {16} and {17}
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 4
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 after t5
constraint, t2 same-day t3
```

constraint, t2 starts-at t4
domain, t2 thu
domain, t2 ends-by mon 10am 10
domain, t3 ends-by wed 2pm 7
domain, t4 ends-by wed 3pm 13
Splitting t1 into {26} and {27}
Splitting t3 into {29} and {30}
Splitting t5 into {0, 1, 2, 3, 8, 9} and {10, 11, 16, 17, 18, 19}
Splitting t5 into {0, 1, 2} and {8, 9, 3}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 1
task, t4 2
task, t5 2
constraint, t3 after t4
constraint, t4 before t5
domain, t1 ends-by thu 12pm 5
domain, t2 ends-by wed 9am 11
domain, t3 ends-by mon 1pm 9
domain, t4 ends-by mon 3pm 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t3 into {2, 3} and {4, 5}
Splitting t3 into {2} and {3}
Splitting t5 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t5 into {2} and {3, 4}
task, t1 2
task, t2 1
task, t3 3
task, t4 2
task, t5 2
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 before t4
constraint, t2 after t5
constraint, t3 after t4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by fri 9am 13
domain, t3 ends-by mon 3pm 20
domain, t4 ends-by thu 2pm 10
domain, t5 ends-by thu 1pm 7

No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t2
domain, t1 ends-by thu 12pm 16
domain, t2 ends-by tue 11am 15
domain, t3 ends-by fri 11am 20
domain, t4 ends-by tue 1pm 14
domain, t5 ends-by mon 10am 12
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 1
constraint, t1 same-day t5
constraint, t3 before t5
constraint, t4 same-day t5
domain, t1 ends-by wed 9am 15
domain, t2 ends-by mon 2pm 8
domain, t3 ends-by thu 2pm 9
domain, t4 ends-by tue 1pm 20
domain, t5 ends-by thu 11am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}

Splitting t4 into {0} and {1, 2}
Splitting t5 into {2, 3} and {4, 5, 6}
Splitting t5 into {2} and {3}
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t3
constraint, t1 same-day t5
domain, t1 tue
domain, t3 fri
domain, t1 ends-by thu 9am 17
domain, t3 ends-by tue 12pm 13
domain, t4 ends-by mon 1pm 13
domain, t5 ends-by thu 9am 5
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
... t2 in {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} has no solu
tion
... t2 in {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 3
0} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 1
constraint, t1 same-day t5
constraint, t2 before t3
constraint, t2 before t5
constraint, t4 after t5
domain, t5 thu
domain, t2 ends-by thu 11am 9
domain, t3 ends-by tue 11am 10
domain, t4 ends-by tue 11am 16
Splitting t1 into {24, 25} and {26, 27}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11} and {12, 16, 17, 18, 19, 20, 24,
25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {4, 8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {3, 4, 5} and {8, 9, 10}
Splitting t3 into {3} and {4, 5}
Splitting t4 into {32, 33, 34, 35, 36, 37} and {38, 25, 26, 27, 28, 29, 30}
Splitting t4 into {25, 26, 38} and {27, 28, 29, 30}
Splitting t4 into {25} and {26, 38}
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 after t3
domain, t2 ends-by fri 9am 8
domain, t3 ends-by mon 2pm 16
domain, t4 ends-by mon 9am 15

```
domain, t5 ends-by mon 11am 7
Splitting t1 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {1, 2, 3} and {8, 9, 4}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 3
task, t2 3
task, t3 1
task, t4 1
task, t5 3
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t3 same-day t4
domain, t1 wed
domain, t1 ends-by thu 11am 18
domain, t2 ends-by thu 12pm 10
domain, t3 ends-by tue 2pm 7
domain, t4 ends-by mon 1pm 9
domain, t5 ends-by thu 9am 5
Splitting t4 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t4 into {16} and {17, 18}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 2
task, t4 1
task, t5 4
constraint, t2 before t5
constraint, t3 same-day t5
domain, t2 fri
domain, t4 tue
domain, t1 ends-by thu 1pm 16
domain, t2 ends-by wed 12pm 6
domain, t4 ends-by thu 3pm 12
domain, t5 ends-by tue 9am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
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Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t3 into {32, 33, 34} and {35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 4
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t1 same-day t4
domain, t1 ends-by fri 4pm 13
domain, t2 ends-by tue 3pm 18
domain, t3 ends-by thu 12pm 9
domain, t4 ends-by wed 2pm 11
domain, t5 ends-by wed 1pm 13
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 4
task, t4 3
task, t5 3
constraint, t3 after t4
constraint, t3 starts-at t5
domain, t1 wed
domain, t3 fri
domain, t1 ends-by mon 11am 12
domain, t2 ends-by mon 10am 11
domain, t4 ends-by mon 11am 20
domain, t5 ends-by fri 9am 8
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
```

Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 2
task, t3 3
task, t4 3
task, t5 4
constraint, t2 starts-at t4
constraint, t4 same-day t5
domain, t1 ends-by mon 4pm 13
domain, t2 ends-by wed 11am 15
domain, t3 ends-by thu 1pm 17
domain, t4 ends-by fri 10am 7
domain, t5 ends-by mon 2pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {35, 3, 4, 5, 36, 37, 11} and {12, 13, 19, 20, 21, 27, 28, 29}
Splitting t2 into {3, 35, 4} and {11, 37, 36, 5}
Splitting t2 into {3} and {35, 4}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 3
constraint, t2 after t3
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by fri 2pm 12
domain, t4 ends-by fri 10am 6
domain, t5 ends-by fri 2pm 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t2 into {32, 33} and {2, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t3 into {0, 1, 2} and {3, 4, 5}

Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 2
task, t4 2
task, t5 4
constraint, t2 same-day t3
constraint, t2 same-day t5
domain, t3 mon
domain, t1 ends-by wed 2pm 7
domain, t2 ends-by tue 2pm 7
domain, t3 ends-by fri 3pm 9
domain, t4 ends-by thu 12pm 16
domain, t5 ends-by thu 10am 14
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 2
constraint, t2 before t3
domain, t1 tue
domain, t2 tue
domain, t1 ends-by thu 4pm 12
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by wed 3pm 8
domain, t4 ends-by tue 3pm 12
domain, t5 ends-by thu 4pm 15
Splitting t1 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t3 into {32, 33, 34, 35, 11, 16} and {17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {32, 33, 34} and {11, 16, 35}
Splitting t3 into {11} and {16, 35}

```
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 3
constraint, t1 same-day t3
constraint, t3 same-day t4
constraint, t4 after t5
domain, t2 mon
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by thu 11am 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {3, 4} and {5, 6}
Splitting t4 into {3} and {4}
task, t1 3
task, t2 1
task, t3 3
task, t4 2
task, t5 1
constraint, t1 after t4
constraint, t2 same-day t4
constraint, t2 same-day t5
domain, t2 mon
domain, t5 thu
domain, t1 ends-by tue 11am 18
domain, t2 ends-by mon 9am 7
domain, t3 ends-by mon 2pm 16
domain, t4 ends-by thu 1pm 12
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
... t3 in {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} has no solution
... t3 in {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 4
task, t3 2
task, t4 2
task, t5 1
constraint, t1 same-day t3
constraint, t1 after t5
```

constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t3 same-day t4
constraint, t3 after t5
domain, t5 wed
domain, t1 ends-by mon 9am 5
domain, t2 ends-by wed 9am 20
domain, t4 ends-by wed 9am 14
domain, t5 ends-by thu 11am 10
Splitting t1 into {32, 33, 34, 35, 36, 37, 17, 18} and {19, 20, 21, 24, 25, 26, 2
7, 28, 29}
Splitting t1 into {32, 33, 34, 35} and {17, 18, 36, 37}
Splitting t1 into {17, 18} and {36, 37}
Splitting t1 into {17} and {18}
Splitting t2 into {16, 17} and {18, 19}
Splitting t2 into {16} and {17}
Splitting t3 into {17, 18} and {19, 20, 21}
Splitting t3 into {17} and {18}
Splitting t4 into {16, 17, 18} and {19, 20, 21}
Splitting t4 into {16} and {17, 18}
task, t1 4
task, t2 3
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 before t4
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 mon
domain, t3 wed
domain, t3 ends-by thu 4pm 9
domain, t4 ends-by mon 9am 16
Splitting t1 into {32, 33, 34, 35} and {24, 25, 26, 27}
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {16, 17} and {18, 19, 20}
Splitting t3 into {16} and {17}
Splitting t4 into {19, 20, 21, 22, 24} and {25, 26, 27, 28, 29, 30}
Splitting t4 into {19, 20} and {24, 21, 22}
Splitting t4 into {19} and {20}
task, t1 4
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t4
constraint, t2 after t5
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t5 mon
domain, t2 ends-by fri 4pm 15
domain, t3 ends-by fri 11am 7
domain, t4 ends-by fri 3pm 16
domain, t5 ends-by wed 12pm 13
Splitting t1 into {0} and {1, 2}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,

36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {4} and {5, 6}
task, t1 4
task, t2 2
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t5
domain, t3 mon
domain, t5 thu
domain, t1 ends-by tue 9am 20
domain, t2 ends-by tue 3pm 10
domain, t3 ends-by thu 10am 20
domain, t4 ends-by wed 1pm 20
domain, t5 ends-by wed 12pm 8
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {24, 25} and {26, 27}
Splitting t5 into {24} and {25}
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 4
constraint, t2 starts-at t4
constraint, t4 after t5
domain, t1 thu
domain, t1 ends-by wed 3pm 18
domain, t2 ends-by tue 11am 5
domain, t3 ends-by tue 1pm 15
domain, t4 ends-by thu 3pm 11
domain, t5 ends-by wed 9am 10
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {36, 37, 38, 12, 13, 14} and {20, 21, 22, 28, 29, 30}
Splitting t2 into {36, 37, 38} and {12, 13, 14}
Splitting t2 into {12} and {13, 14}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}

```
Splitting t5 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
task, t4 2
task, t5 4
constraint, t2 same-day t5
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by thu 9am 9
domain, t3 ends-by thu 9am 10
domain, t4 ends-by mon 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
constraint, t3 after t5
domain, t3 wed
domain, t2 ends-by thu 9am 20
domain, t3 ends-by mon 11am 18
domain, t5 ends-by thu 3pm 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
```

```
task, t1 3
task, t2 4
task, t3 1
task, t4 1
task, t5 2
constraint, t1 before t3
constraint, t2 after t4
constraint, t3 starts-at t4
domain, t5 mon
domain, t2 ends-by wed 12pm 18
domain, t3 ends-by mon 9am 20
domain, t4 ends-by tue 10am 20
domain, t5 ends-by fri 1pm 11
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20,
24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t2 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t2 into {32, 33} and {34, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 17} and {18, 19, 20, 21, 2
2, 25, 26, 27, 28, 29, 30}
Splitting t3 into {3, 4, 5, 6, 9} and {10, 11, 12, 13, 14, 17}
Splitting t3 into {3, 4} and {9, 5, 6}
Splitting t3 into {3} and {4}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 1
task, t4 3
task, t5 2
constraint, t4 after t5
domain, t1 fri
domain, t3 ends-by wed 9am 8
domain, t4 ends-by thu 10am 10
domain, t5 ends-by wed 2pm 18
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t4 into {2, 3} and {8, 9, 4}
Splitting t4 into {2} and {3}
task, t1 1
```

```
task, t2 3
task, t3 2
task, t4 4
task, t5 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t2 after t3
constraint, t2 after t4
constraint, t2 same-day t5
domain, t1 ends-by thu 9am 5
domain, t2 ends-by thu 11am 14
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {3
2, 33, 34, 35, 36, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {8, 9, 10} and {11, 12, 13}
Splitting t5 into {8} and {9, 10}
task, t1 3
task, t2 3
task, t3 4
task, t4 4
task, t5 2
constraint, t1 before t2
constraint, t1 same-day t3
domain, t5 fri
domain, t1 ends-by thu 1pm 18
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by thu 12pm 7
domain, t5 ends-by tue 9am 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {32, 33, 34} and {35, 36, 37}
Splitting t5 into {32} and {33, 34}
task, t1 3
```

```
task, t2 1
task, t3 3
task, t4 3
task, t5 4
constraint, t1 starts-at t4
constraint, t3 before t5
domain, t5 thu
domain, t1 ends-by fri 12pm 20
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by fri 4pm 16
domain, t4 ends-by fri 9am 15
domain, t5 ends-by mon 11am 6
Splitting t1 into {35, 3, 4, 36, 11} and {12, 19, 20, 27, 28}
Splitting t1 into {3, 35} and {11, 4, 36}
Splitting t1 into {3} and {35}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19, 20, 24}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {24, 25} and {26, 27}
Splitting t5 into {24} and {25}
task, t1 3
task, t2 4
task, t3 1
task, t4 4
task, t5 1
constraint, t1 before t2
constraint, t1 before t4
constraint, t1 before t5
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t4 mon
domain, t1 ends-by wed 11am 13
domain, t2 ends-by fri 4pm 9
domain, t4 ends-by tue 12pm 10
domain, t5 ends-by mon 3pm 9
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 3
constraint, t2 after t3
domain, t1 fri
domain, t3 thu
domain, t1 ends-by mon 4pm 15
domain, t2 ends-by wed 9am 16
domain, t3 ends-by thu 3pm 6
domain, t4 ends-by tue 11am 15
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
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```
Splitting t1 into {32} and {33, 34}
Splitting t2 into {32, 33, 34} and {35, 36, 28}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 3
task, t4 2
task, t5 3
constraint, t2 after t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 before t5
domain, t2 mon
domain, t5 mon
domain, t1 ends-by thu 11am 11
domain, t2 ends-by fri 9am 12
domain, t3 ends-by thu 10am 16
domain, t4 ends-by fri 3pm 10
domain, t5 ends-by fri 9am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
... t1 in {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} has no solu
tion
... t1 in {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 3
0} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 1
task, t3 2
task, t4 1
task, t5 2
constraint, t1 before t2
constraint, t2 after t5
constraint, t3 before t4
domain, t1 wed
domain, t2 fri
domain, t1 ends-by fri 10am 19
domain, t2 ends-by fri 2pm 11
domain, t3 ends-by mon 2pm 5
domain, t5 ends-by thu 4pm 13
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
```

Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t4 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t4 into {2, 3} and {4, 5}
Splitting t4 into {2} and {3}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 3
constraint, t1 before t3
domain, t5 wed
domain, t1 ends-by wed 11am 11
domain, t3 ends-by thu 2pm 5
domain, t5 ends-by wed 9am 5
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t3 into {8, 4, 5} and {9, 10, 11}
Splitting t3 into {8} and {4, 5}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {16, 17} and {18, 19, 20}
Splitting t5 into {16} and {17}
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t3 before t4
constraint, t3 before t5
domain, t2 fri
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by mon 10am 17

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domain, t3 ends-by fri 4pm 14
domain, t4 ends-by thu 12pm 11
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 4
task, t3 4
task, t4 1
task, t5 4
constraint, t1 after t2
constraint, t2 before t4
domain, t1 ends-by wed 3pm 18
domain, t3 ends-by wed 1pm 12
domain, t4 ends-by thu 3pm 13
domain, t5 ends-by tue 11am 5
Splitting t1 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t1 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t1 into {8, 4} and {9, 10, 11}
Splitting t1 into {8} and {4}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t4 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t4 into {4} and {5, 6}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 4
constraint, t1 before t4
constraint, t3 same-day t4
domain, t1 ends-by mon 2pm 11
domain, t3 ends-by wed 11am 6
domain, t4 ends-by tue 3pm 6
domain, t5 ends-by tue 4pm 10
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t3 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t3 into {8, 9} and {10, 11, 12}
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Splitting t3 into {8} and {9}
Splitting t4 into {8, 9} and {10, 11}
Splitting t4 into {8} and {9}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t5
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t1 thu
domain, t1 ends-by tue 9am 10
domain, t2 ends-by mon 10am 20
domain, t3 ends-by mon 4pm 18
domain, t4 ends-by tue 3pm 7
domain, t5 ends-by fri 2pm 19
Splitting t1 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {32,
33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {6, 8, 9, 10, 11, 12, 13} and {14, 16, 17, 18, 19, 20, 21}
Splitting t2 into {8, 9, 6} and {10, 11, 12, 13}
Splitting t2 into {8} and {9, 6}
Splitting t3 into {3} and {4}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 1
task, t2 2
task, t3 2
task, t4 1
task, t5 1
domain, t1 thu
domain, t3 thu
domain, t1 ends-by wed 11am 11
domain, t2 ends-by tue 9am 9
domain, t4 ends-by mon 2pm 9
domain, t5 ends-by mon 12pm 19
Splitting t1 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
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Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 4
task, t3 2
task, t4 2
task, t5 1
constraint, t2 same-day t5
domain, t1 thu
domain, t2 ends-by fri 11am 11
domain, t3 ends-by wed 11am 7
domain, t4 ends-by wed 4pm 15
Splitting t1 into {24, 25, 26} and {27, 28, 29}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t2
constraint, t2 after t4
domain, t2 tue
domain, t2 ends-by tue 2pm 9
domain, t3 ends-by tue 10am 17
domain, t4 ends-by thu 1pm 7
domain, t5 ends-by thu 9am 16
Splitting t1 into {10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 24} and {32, 33, 34, 3
5, 36, 37, 25, 26, 27, 28, 29}
Splitting t1 into {10, 11, 12, 13, 16} and {17, 18, 19, 20, 21, 24}
Splitting t1 into {10, 11} and {16, 12, 13}
Splitting t1 into {10} and {11}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
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Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t4 same-day t5
domain, t2 tue
domain, t4 mon
domain, t4 ends-by fri 4pm 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9, 10} and {11, 12, 13}
Splitting t2 into {8} and {9, 10}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by thu 11am 20
domain, t2 ends-by fri 10am 10
domain, t3 ends-by thu 1pm 19
domain, t5 ends-by tue 9am 15
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t3 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t3 into {8, 9, 10} and {11, 12, 13}
Splitting t3 into {8} and {9, 10}
task, t1 2
```

task, t2 1
task, t3 2
task, t4 4
task, t5 4
constraint, t1 same-day t2
constraint, t2 before t4
constraint, t3 same-day t5
domain, t1 ends-by fri 1pm 14
domain, t2 ends-by mon 12pm 8
domain, t3 ends-by thu 3pm 16
domain, t4 ends-by fri 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t2 same-day t3
domain, t1 tue
domain, t3 fri
domain, t4 tue
domain, t2 ends-by mon 10am 13
domain, t3 ends-by wed 1pm 6
domain, t4 ends-by fri 10am 13
domain, t5 ends-by mon 2pm 13
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {32, 33, 34} and {35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {8, 9} and {10, 11, 12}
Splitting t4 into {8} and {9}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 2
task, t3 3
task, t4 4

task, t5 3
constraint, t1 before t4
constraint, t1 before t5
constraint, t3 starts-at t5
constraint, t4 same-day t5
domain, t1 ends-by thu 9am 17
domain, t3 ends-by thu 2pm 13
domain, t4 ends-by thu 12pm 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {11, 35, 36, 12} and {27, 19, 20, 28}
Splitting t3 into {35, 11} and {36, 12}
Splitting t3 into {35} and {11}
Splitting t4 into {32, 33} and {34, 35}
Splitting t4 into {32} and {33}
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 3
constraint, t1 before t2
constraint, t3 same-day t4
domain, t4 mon
domain, t5 wed
domain, t1 ends-by thu 3pm 6
domain, t3 ends-by tue 3pm 5
domain, t4 ends-by wed 10am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {16, 17} and {18, 19, 20}
Splitting t5 into {16} and {17}
task, t1 3
task, t2 1
task, t3 1
task, t4 3
task, t5 2
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t2 fri

```
domain, t1 ends-by thu 3pm 9
domain, t2 ends-by wed 9am 18
domain, t4 ends-by mon 12pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 34, 17, 18,
19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {32, 33} and {34, 35, 36}
Splitting t4 into {32} and {33}
Splitting t5 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {3, 4, 5} and {8, 9, 10}
Splitting t5 into {3} and {4, 5}
task, t1 1
task, t2 4
task, t3 1
task, t4 1
task, t5 3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 20
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by tue 11am 7
domain, t4 ends-by mon 1pm 11
domain, t5 ends-by mon 3pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16} and {32, 33, 34, 17, 18, 19, 24,
25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11, 16}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t3 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t3 into {4} and {5, 6}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t4 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t4 into {4} and {5, 6}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 3
```

```
task, t2 3
task, t3 4
task, t4 1
task, t5 4
constraint, t1 same-day t5
domain, t3 thu
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 11am 9
domain, t4 ends-by fri 9am 20
domain, t5 ends-by tue 1pm 10
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 2
task, t2 1
task, t3 4
task, t4 2
task, t5 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 before t5
domain, t1 fri
domain, t3 mon
domain, t1 ends-by tue 1pm 9
domain, t2 ends-by tue 4pm 11
domain, t3 ends-by tue 12pm 7
domain, t4 ends-by mon 9am 12
domain, t5 ends-by wed 12pm 10
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
... t4 in {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} has no solution
... t4 in {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29} has no sol
ution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 1
task, t4 1
task, t5 3
constraint, t1 after t5
constraint, t2 before t4
constraint, t2 after t5
```

```
domain, t5 fri
domain, t1 ends-by wed 11am 11
domain, t3 ends-by thu 2pm 11
domain, t4 ends-by wed 3pm 18
domain, t5 ends-by tue 2pm 8
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
... t3 in {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} has no solu
tion
... t3 in {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 3
0} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t1 starts-at t2
constraint, t1 same-day t3
constraint, t1 same-day t4
constraint, t3 after t5
domain, t2 fri
domain, t5 fri
domain, t2 ends-by tue 1pm 19
domain, t3 ends-by mon 1pm 20
domain, t5 ends-by tue 3pm 13
Splitting t1 into {35} and {36}
Splitting t3 into {35, 36} and {37, 38}
Splitting t3 into {35} and {36}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 2
constraint, t1 before t2
domain, t1 ends-by wed 12pm 5
domain, t2 ends-by thu 10am 14
domain, t3 ends-by fri 12pm 20
domain, t4 ends-by tue 12pm 6
domain, t5 ends-by tue 3pm 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
```

```
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 starts-at t5
domain, t3 wed
domain, t4 tue
domain, t1 ends-by wed 2pm 9
domain, t2 ends-by wed 1pm 7
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by wed 11am 9
Splitting t1 into {12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24} and {32, 33, 34, 3
5, 36, 37, 25, 26, 27, 28, 29, 30}
Splitting t1 into {12, 13, 14, 16, 17} and {18, 19, 20, 21, 22, 24}
Splitting t1 into {12, 13} and {16, 17, 14}
Splitting t1 into {12} and {13}
Splitting t2 into {13, 14, 16, 17, 18, 19, 20, 21, 22, 24, 25} and {32, 33, 34, 3
5, 36, 37, 38, 26, 27, 28, 29, 30}
Splitting t2 into {13, 14, 16, 17, 18} and {19, 20, 21, 22, 24, 25}
Splitting t2 into {13, 14} and {16, 17, 18}
Splitting t2 into {13} and {14}
Splitting t3 into {20} and {21, 22}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
task, t5 1
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t3 after t4
constraint, t4 same-day t5
domain, t1 thu
domain, t1 ends-by thu 3pm 14
domain, t2 ends-by tue 11am 20
domain, t3 ends-by tue 3pm 20
domain, t4 ends-by thu 1pm 8
domain, t5 ends-by tue 4pm 19
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
... t2 in {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} has no solution
... t2 in {32, 33, 34, 35, 18, 19, 24, 25, 26, 27} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 2
task, t4 2
task, t5 4
constraint, t1 before t2
constraint, t3 starts-at t5
```

```
domain, t4 fri
domain, t1 ends-by tue 3pm 17
domain, t2 ends-by fri 4pm 10
domain, t3 ends-by thu 10am 12
domain, t4 ends-by wed 2pm 20
domain, t5 ends-by tue 10am 14
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {4, 37, 5, 36, 12} and {13, 20, 21, 28, 29}
Splitting t3 into {4, 37} and {12, 36, 5}
Splitting t3 into {4} and {37}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
task, t1 3
task, t2 3
task, t3 3
task, t4 2
task, t5 1
constraint, t2 before t3
constraint, t4 before t5
domain, t1 thu
domain, t5 wed
domain, t2 ends-by mon 9am 10
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t3 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t3 into {3, 4} and {8, 9, 10}
Splitting t3 into {3} and {4}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18, 19, 2
0}
Splitting t4 into {0, 1, 2, 3} and {8, 9, 4, 5}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t5 into {16} and {17, 18}
task, t1 4
task, t2 2
task, t3 1
task, t4 4
task, t5 1
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t4 after t5
```

```
domain, t4 wed
domain, t1 ends-by wed 9am 8
domain, t3 ends-by mon 11am 6
domain, t4 ends-by fri 3pm 5
domain, t5 ends-by thu 10am 18
Splitting t1 into {1, 2} and {8, 9, 3}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {16, 17} and {18, 19}
Splitting t4 into {16} and {17}
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 4
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t2 starts-at t4
domain, t2 thu
domain, t2 ends-by mon 10am 10
domain, t3 ends-by wed 2pm 7
domain, t4 ends-by wed 3pm 13
Splitting t1 into {26} and {27}
Splitting t3 into {29} and {30}
Splitting t5 into {0, 1, 2, 3, 8, 9} and {10, 11, 16, 17, 18, 19}
Splitting t5 into {0, 1, 2} and {8, 9, 3}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 1
task, t4 2
task, t5 2
constraint, t3 after t4
constraint, t4 before t5
domain, t1 ends-by thu 12pm 5
domain, t2 ends-by wed 9am 11
domain, t3 ends-by mon 1pm 9
domain, t4 ends-by mon 3pm 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t3 into {2, 3} and {4, 5}
Splitting t3 into {2} and {3}
Splitting t5 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
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```
Splitting t5 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t5 into {2} and {3, 4}
task, t1 2
task, t2 1
task, t3 3
task, t4 2
task, t5 2
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 before t4
constraint, t2 after t5
constraint, t3 after t4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by fri 9am 13
domain, t3 ends-by mon 3pm 20
domain, t4 ends-by thu 2pm 10
domain, t5 ends-by thu 1pm 7
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t2
domain, t1 ends-by thu 12pm 16
domain, t2 ends-by tue 11am 15
domain, t3 ends-by fri 11am 20
domain, t4 ends-by tue 1pm 14
domain, t5 ends-by mon 10am 12
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 1
constraint, t1 same-day t5
constraint, t3 before t5
constraint, t4 same-day t5
domain, t1 ends-by wed 9am 15
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```
domain, t2 ends-by mon 2pm 8
domain, t3 ends-by thu 2pm 9
domain, t4 ends-by tue 1pm 20
domain, t5 ends-by thu 11am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {2, 3} and {4, 5, 6}
Splitting t5 into {2} and {3}
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t3
constraint, t1 same-day t5
domain, t1 tue
domain, t3 fri
domain, t1 ends-by thu 9am 17
domain, t3 ends-by tue 12pm 13
domain, t4 ends-by mon 1pm 13
domain, t5 ends-by thu 9am 5
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
... t2 in {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} has no solu
tion
... t2 in {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 3
0} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 1
constraint, t1 same-day t5
constraint, t2 before t3
constraint, t2 before t5
constraint, t4 after t5
domain, t5 thu
domain, t2 ends-by thu 11am 9
domain, t3 ends-by tue 11am 10
domain, t4 ends-by tue 11am 16
Splitting t1 into {24, 25} and {26, 27}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11} and {12, 16, 17, 18, 19, 20, 24,
25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {4, 8, 9, 10, 11}
```

Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {3, 4, 5} and {8, 9, 10}
Splitting t3 into {3} and {4, 5}
Splitting t4 into {32, 33, 34, 35, 36, 37} and {38, 25, 26, 27, 28, 29, 30}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
Splitting t5 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t5 into {24} and {25, 26}
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 after t3
domain, t2 ends-by fri 9am 8
domain, t3 ends-by mon 2pm 16
domain, t4 ends-by mon 9am 15
domain, t5 ends-by mon 11am 7
Splitting t1 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 36, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {1, 2, 3} and {8, 9, 4}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 3
task, t2 3
task, t3 1
task, t4 1
task, t5 3
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t3 same-day t4
domain, t1 wed
domain, t1 ends-by thu 11am 18
domain, t2 ends-by thu 12pm 10
domain, t3 ends-by tue 2pm 7
domain, t4 ends-by mon 1pm 9
domain, t5 ends-by thu 9am 5
Splitting t4 into {16, 17, 18} and {19, 20, 21, 22}

```
Splitting t4 into {16} and {17, 18}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 2
task, t4 1
task, t5 4
constraint, t2 before t5
constraint, t3 same-day t5
domain, t2 fri
domain, t4 tue
domain, t1 ends-by thu 1pm 16
domain, t2 ends-by wed 12pm 6
domain, t4 ends-by thu 3pm 12
domain, t5 ends-by tue 9am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t3 into {32, 33, 34} and {35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
task, t1 4
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t1 same-day t4
domain, t1 ends-by fri 4pm 13
domain, t2 ends-by tue 3pm 18
domain, t3 ends-by thu 12pm 9
domain, t4 ends-by wed 2pm 11
domain, t5 ends-by wed 1pm 13
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
```

```
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 1
task, t3 4
task, t4 3
task, t5 3
constraint, t3 after t4
constraint, t3 starts-at t5
domain, t1 wed
domain, t3 fri
domain, t1 ends-by mon 11am 12
domain, t2 ends-by mon 10am 11
domain, t4 ends-by mon 11am 20
domain, t5 ends-by fri 9am 8
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20,
24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 2
task, t3 3
task, t4 3
task, t5 4
constraint, t2 starts-at t4
constraint, t4 same-day t5
domain, t1 ends-by mon 4pm 13
domain, t2 ends-by wed 11am 15
domain, t3 ends-by thu 1pm 17
domain, t4 ends-by fri 10am 7
domain, t5 ends-by mon 2pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {35, 3, 4, 5, 36, 37, 11} and {12, 13, 19, 20, 21, 27, 28, 29}
Splitting t2 into {3, 35, 4} and {11, 37, 36, 5}
Splitting t2 into {3} and {35, 4}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 4
task, t3 2
```

task, t4 4
task, t5 3
constraint, t2 after t3
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by fri 2pm 12
domain, t4 ends-by fri 10am 6
domain, t5 ends-by fri 2pm 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t2 into {32, 33} and {2, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 2
task, t4 2
task, t5 4
constraint, t2 same-day t3
constraint, t2 same-day t5
domain, t3 mon
domain, t1 ends-by wed 2pm 7
domain, t2 ends-by tue 2pm 7
domain, t3 ends-by fri 3pm 9
domain, t4 ends-by thu 12pm 16
domain, t5 ends-by thu 10am 14
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}

```
Splitting t5 into {0} and {1}
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 2
constraint, t2 before t3
domain, t1 tue
domain, t2 tue
domain, t1 ends-by thu 4pm 12
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by wed 3pm 8
domain, t4 ends-by tue 3pm 12
domain, t5 ends-by thu 4pm 15
Splitting t1 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t3 into {32, 33, 34, 35, 11, 16} and {17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {32, 33, 34} and {11, 16, 35}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 3
constraint, t1 same-day t3
constraint, t3 same-day t4
constraint, t4 after t5
domain, t2 mon
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by thu 11am 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {3, 4} and {5, 6}
Splitting t4 into {3} and {4}
task, t1 3
task, t2 1
task, t3 3
task, t4 2
task, t5 1
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constraint, t1 after t4
constraint, t2 same-day t4
constraint, t2 same-day t5
domain, t2 mon
domain, t5 thu
domain, t1 ends-by tue 11am 18
domain, t2 ends-by mon 9am 7
domain, t3 ends-by mon 2pm 16
domain, t4 ends-by thu 1pm 12
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
... t3 in {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} has no solution
... t3 in {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 4
task, t3 2
task, t4 2
task, t5 1
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t3 same-day t4
constraint, t3 after t5
domain, t5 wed
domain, t1 ends-by mon 9am 5
domain, t2 ends-by wed 9am 20
domain, t4 ends-by wed 9am 14
domain, t5 ends-by thu 11am 10
Splitting t1 into {32, 33, 34, 35, 36, 37, 17, 18} and {19, 20, 21, 24, 25, 26, 2
7, 28, 29}
Splitting t1 into {32, 33, 34, 35} and {17, 18, 36, 37}
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t3 into {32, 33, 34} and {35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
Splitting t5 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t5 into {16} and {17, 18}
task, t1 4
task, t2 3
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 before t4
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 mon
domain, t3 wed
domain, t3 ends-by thu 4pm 9
domain, t4 ends-by mon 9am 16
Splitting t1 into {32, 33, 34, 35} and {24, 25, 26, 27}
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
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```
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {16, 17} and {18, 19, 20}
Splitting t3 into {16} and {17}
Splitting t4 into {19, 20, 21, 22, 24} and {25, 26, 27, 28, 29, 30}
Splitting t4 into {19, 20} and {24, 21, 22}
Splitting t4 into {19} and {20}
task, t1 4
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t4
constraint, t2 after t5
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t5 mon
domain, t2 ends-by fri 4pm 15
domain, t3 ends-by fri 11am 7
domain, t4 ends-by fri 3pm 16
domain, t5 ends-by wed 12pm 13
Splitting t1 into {0} and {1, 2}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {4} and {5, 6}
task, t1 4
task, t2 2
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t5
domain, t3 mon
domain, t5 thu
domain, t1 ends-by tue 9am 20
domain, t2 ends-by tue 3pm 10
domain, t3 ends-by thu 10am 20
domain, t4 ends-by wed 1pm 20
domain, t5 ends-by wed 12pm 8
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {24, 25} and {26, 27}
Splitting t5 into {24} and {25}
task, t1 3
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```
task, t2 1
task, t3 3
task, t4 4
task, t5 4
constraint, t2 starts-at t4
constraint, t4 after t5
domain, t1 thu
domain, t1 ends-by wed 3pm 18
domain, t2 ends-by tue 11am 5
domain, t3 ends-by tue 1pm 15
domain, t4 ends-by thu 3pm 11
domain, t5 ends-by wed 9am 10
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {36, 37, 38, 12, 13, 14} and {20, 21, 22, 28, 29, 30}
Splitting t2 into {36, 37, 38} and {12, 13, 14}
Splitting t2 into {36} and {37, 38}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 1
task, t2 1
task, t3 3
task, t4 2
task, t5 4
constraint, t2 same-day t5
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by thu 9am 9
domain, t3 ends-by thu 9am 10
domain, t4 ends-by mon 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Task 5: with cost=12.67, without cost=12.85, improvement=1.4%
task, t1 4
task, t2 1
task, t3 4
task, t4 4
```

```
task, t5 3
task, t6 1
constraint, t1 same-day t5
constraint, t2 before t4
constraint, t3 before t4
domain, t5 mon
domain, t1 ends-by thu 4pm 17
domain, t2 ends-by fri 4pm 5
domain, t3 ends-by wed 1pm 16
domain, t4 ends-by thu 12pm 6
domain, t5 ends-by wed 4pm 6
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t4 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t4 into {8, 9} and {10, 11}
Splitting t4 into {8} and {9}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t6 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 4
task, t6 1
constraint, t1 after t4
constraint, t2 after t3
constraint, t3 before t6
domain, t2 tue
domain, t3 tue
domain, t3 ends-by tue 12pm 11
domain, t4 ends-by thu 10am 13
domain, t5 ends-by mon 4pm 20
domain, t6 ends-by thu 3pm 11
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t1 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t1 into {1, 2} and {3, 4}
Splitting t1 into {1} and {2}
Splitting t2 into {11} and {12, 13}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
```

```
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24} and {32, 33, 3
4, 35, 36, 37, 38, 25, 26, 27, 28, 29, 30}
Splitting t6 into {11, 12, 13, 14, 16, 17} and {18, 19, 20, 21, 22, 24}
Splitting t6 into {11, 12, 13} and {16, 17, 14}
Splitting t6 into {11} and {12, 13}
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 2
task, t6 3
constraint, t3 after t6
constraint, t5 before t6
domain, t4 thu
domain, t5 thu
domain, t1 ends-by mon 11am 6
domain, t2 ends-by wed 4pm 7
domain, t4 ends-by mon 1pm 18
domain, t5 ends-by wed 12pm 10
domain, t6 ends-by thu 4pm 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33} and {34, 35, 36}
Splitting t3 into {32} and {33}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
Splitting t5 into {24} and {25, 26}
Splitting t6 into {26} and {27, 28}
task, t1 1
task, t2 2
task, t3 4
task, t4 4
task, t5 1
task, t6 2
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 same-day t5
domain, t3 mon
domain, t4 fri
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by thu 2pm 16
domain, t3 ends-by thu 1pm 15
domain, t4 ends-by wed 1pm 7
domain, t5 ends-by wed 2pm 9
domain, t6 ends-by wed 2pm 7
No (more) solutions. Total of 1 paths expanded.
```

```
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 1
task, t6 1
constraint, t1 after t2
constraint, t1 after t4
constraint, t4 after t5
domain, t4 fri
domain, t1 ends-by wed 3pm 20
domain, t2 ends-by wed 1pm 19
domain, t3 ends-by tue 2pm 8
domain, t4 ends-by thu 3pm 5
domain, t5 ends-by fri 1pm 9
domain, t6 ends-by thu 12pm 8
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14} and {16, 17, 1
8, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t6 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 4
task, t2 2
task, t3 1
task, t4 3
task, t5 1
task, t6 4
constraint, t2 same-day t3
constraint, t2 starts-at t6
constraint, t3 after t5
constraint, t4 before t6
domain, t1 ends-by fri 4pm 17
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by wed 2pm 12
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by tue 10am 5
domain, t6 ends-by mon 9am 15
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
```

```
Splitting t2 into {12, 13, 36, 37} and {28, 29, 20, 21}
Splitting t2 into {12, 13} and {36, 37}
Splitting t2 into {12} and {13}
Splitting t3 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 3
task, t4 3
task, t5 3
task, t6 2
constraint, t1 before t3
constraint, t1 before t4
constraint, t1 same-day t6
constraint, t2 same-day t6
constraint, t3 after t6
constraint, t4 before t5
constraint, t5 same-day t6
domain, t1 ends-by thu 11am 17
domain, t2 ends-by wed 3pm 14
domain, t3 ends-by thu 3pm 5
domain, t4 ends-by thu 12pm 14
domain, t6 ends-by fri 11am 9
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 1
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t1 after t4
domain, t1 wed
domain, t2 thu
domain, t1 ends-by thu 9am 16
domain, t3 ends-by mon 2pm 15
domain, t4 ends-by tue 10am 19
domain, t5 ends-by fri 2pm 10
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
```

```
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 3
task, t4 2
task, t5 4
task, t6 2
constraint, t3 after t6
constraint, t4 after t5
domain, t1 ends-by fri 10am 10
domain, t2 ends-by thu 10am 9
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by wed 9am 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t3 into {2, 3} and {8, 9, 4}
Splitting t3 into {2} and {3}
Splitting t4 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t4 into {8, 4, 5} and {9, 10, 11}
Splitting t4 into {8} and {4, 5}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 1
task, t2 4
task, t3 2
task, t4 3
task, t5 4
task, t6 2
constraint, t1 after t6
constraint, t2 before t3
domain, t3 tue
domain, t4 wed
domain, t1 ends-by wed 11am 11
domain, t2 ends-by wed 12pm 12
domain, t5 ends-by tue 3pm 16
domain, t6 ends-by fri 10am 16
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t1 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t1 into {2, 3} and {4, 5}
Splitting t1 into {2} and {3}
Splitting t2 into {0, 1, 2} and {8, 9, 3}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9, 10} and {11, 12, 13}
```

```
Splitting t3 into {8} and {9, 10}
Splitting t4 into {16, 17} and {18, 19, 20}
Splitting t4 into {16} and {17}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 1
task, t3 2
task, t4 3
task, t5 2
task, t6 4
constraint, t1 before t3
constraint, t1 after t6
constraint, t2 before t3
constraint, t2 same-day t4
constraint, t3 same-day t6
constraint, t5 before t6
domain, t1 ends-by tue 12pm 20
domain, t2 ends-by mon 9am 15
domain, t4 ends-by tue 4pm 19
domain, t5 ends-by wed 10am 15
domain, t6 ends-by fri 11am 20
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 2
task, t6 1
constraint, t1 before t5
constraint, t1 starts-at t6
constraint, t2 before t3
constraint, t4 after t5
domain, t1 thu
domain, t3 tue
domain, t4 tue
domain, t1 ends-by fri 3pm 17
domain, t6 ends-by wed 2pm 12
Splitting t2 into {0, 1, 2, 3} and {8, 9, 4, 5}
... t2 in {0, 1, 2, 3} has no solution
... t2 in {8, 9, 4, 5} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 3
task, t4 3
task, t5 3
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 after t6
constraint, t4 starts-at t5
domain, t4 tue
domain, t6 wed
domain, t1 ends-by fri 10am 9
domain, t2 ends-by thu 11am 18
```

```
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by tue 11am 17
domain, t5 ends-by thu 2pm 8
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 3
task, t6 2
constraint, t1 same-day t5
constraint, t1 after t6
constraint, t3 before t5
constraint, t3 same-day t6
constraint, t5 before t6
domain, t2 wed
domain, t3 fri
domain, t1 ends-by thu 4pm 17
domain, t3 ends-by thu 12pm 19
domain, t4 ends-by fri 3pm 11
domain, t5 ends-by wed 12pm 16
domain, t6 ends-by wed 3pm 15
Splitting t2 into {16, 17, 18} and {19, 20, 21, 22}
... t2 in {16, 17, 18} has no solution
... t2 in {19, 20, 21, 22} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 2
task, t3 2
task, t4 1
task, t5 3
task, t6 2
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
domain, t1 wed
domain, t2 thu
domain, t1 ends-by mon 11am 13
domain, t2 ends-by mon 12pm 14
domain, t3 ends-by thu 11am 14
domain, t4 ends-by tue 11am 14
domain, t5 ends-by wed 3pm 6
Splitting t1 into {16, 17, 18} and {19, 20, 21}
Splitting t1 into {16} and {17, 18}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,
34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t3 into {1} and {2, 3}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {32, 33, 34, 35, 36} and {37, 26, 27, 28, 29}
Splitting t6 into {32, 33} and {34, 35, 36}
Splitting t6 into {32} and {33}
task, t1 1
```

```
task, t2 3
task, t3 1
task, t4 3
task, t5 3
task, t6 4
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t2 before t6
domain, t3 tue
domain, t1 ends-by mon 12pm 18
domain, t2 ends-by tue 3pm 18
domain, t3 ends-by wed 9am 15
domain, t4 ends-by fri 3pm 7
domain, t5 ends-by thu 2pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5} and {6, 8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t3 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {32, 33, 34, 35, 11, 16} and {17, 18, 19, 24, 25, 26, 27}
Splitting t6 into {32, 33, 34} and {11, 16, 35}
Splitting t6 into {32} and {33, 34}
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 1
task, t6 1
constraint, t2 same-day t3
constraint, t2 same-day t5
constraint, t3 before t6
domain, t1 ends-by fri 12pm 9
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by wed 2pm 11
domain, t5 ends-by tue 10am 12
domain, t6 ends-by thu 10am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
```

```
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t6 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t6 into {4} and {5, 6}
task, t1 2
task, t2 3
task, t3 3
task, t4 2
task, t5 3
task, t6 3
constraint, t1 before t2
constraint, t1 starts-at t3
constraint, t1 starts-at t5
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t2 after t6
constraint, t3 before t5
constraint, t4 after t5
constraint, t5 same-day t6
domain, t2 tue
domain, t4 wed
domain, t1 ends-by tue 9am 11
domain, t2 ends-by wed 9am 5
domain, t3 ends-by fri 2pm 19
domain, t4 ends-by fri 9am 19
domain, t5 ends-by tue 4pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 1
task, t5 4
task, t6 1
constraint, t1 same-day t4
constraint, t1 after t5
constraint, t3 same-day t4
constraint, t3 before t5
constraint, t4 before t6
constraint, t5 after t6
domain, t1 ends-by mon 1pm 18
domain, t2 ends-by fri 12pm 9
domain, t3 ends-by thu 11am 6
domain, t4 ends-by fri 11am 15
domain, t5 ends-by tue 12pm 5
domain, t6 ends-by tue 3pm 18
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
... t2 in {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} has no solution
... t2 in {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
```

```
task, t3 2
task, t4 3
task, t5 3
task, t6 2
constraint, t1 before t4
constraint, t2 after t6
constraint, t4 after t5
domain, t1 ends-by thu 1pm 16
domain, t2 ends-by tue 2pm 11
domain, t3 ends-by fri 12pm 14
domain, t4 ends-by fri 3pm 5
domain, t5 ends-by wed 12pm 8
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t4 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t4 into {3, 4} and {8, 9, 10}
Splitting t4 into {3} and {4}
task, t1 2
task, t2 3
task, t3 4
task, t4 1
task, t5 2
task, t6 2
constraint, t1 same-day t4
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t4
constraint, t3 same-day t6
domain, t1 ends-by wed 3pm 15
domain, t2 ends-by mon 10am 11
domain, t3 ends-by mon 3pm 19
domain, t4 ends-by thu 1pm 13
domain, t5 ends-by thu 9am 7
domain, t6 ends-by thu 12pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 34, 17, 18,
19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {0} and {1, 2}
```

Splitting t4 into {4} and {5, 6}
Splitting t5 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {3, 4, 5} and {8, 9, 10}
Splitting t5 into {3} and {4, 5}
Splitting t6 into {0, 1, 2} and {3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 3
task, t4 2
task, t5 1
task, t6 1
constraint, t1 before t6
constraint, t2 starts-at t5
constraint, t3 before t5
domain, t1 wed
domain, t1 ends-by wed 11am 5
domain, t2 ends-by tue 11am 16
domain, t3 ends-by wed 10am 5
domain, t5 ends-by wed 1pm 15
domain, t6 ends-by thu 12pm 9
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {33, 34, 35, 4, 36, 9, 10, 11} and {12, 17, 18, 19, 20, 25, 26,
27, 28}
Splitting t2 into {33, 34, 35, 4} and {9, 10, 11, 36}
Splitting t2 into {33, 34} and {35, 4}
Splitting t2 into {35} and {4}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t6 into {32, 33, 34, 35, 36, 37, 38, 20} and {21, 22, 24, 25, 26, 27, 2
8, 29, 30}
Splitting t6 into {32, 33, 34, 35} and {20, 36, 37, 38}
Splitting t6 into {20, 36} and {37, 38}
Splitting t6 into {20} and {36}
task, t1 1
task, t2 4
task, t3 3
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 same-day t4
constraint, t3 same-day t6
domain, t3 mon
domain, t1 ends-by mon 12pm 18
domain, t2 ends-by tue 1pm 9
domain, t3 ends-by fri 2pm 17
domain, t4 ends-by mon 1pm 9
Splitting t1 into {6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {32,
33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {6, 8, 9, 10, 11, 12, 13} and {14, 16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 6} and {10, 11, 12, 13}
Splitting t1 into {8} and {9, 6}

Splitting t1 into {9} and {6}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3, 4}
Splitting t6 into {0} and {1}
task, t1 3
task, t2 2
task, t3 2
task, t4 1
task, t5 3
task, t6 2
constraint, t1 after t2
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t2 ends-by thu 10am 10
domain, t3 ends-by wed 12pm 9
domain, t5 ends-by wed 3pm 10
Splitting t1 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 36, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {2, 3} and {8, 9, 4}
Splitting t1 into {2} and {3}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 1
task, t6 1
constraint, t1 starts-at t2
constraint, t2 after t6
constraint, t3 after t4
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by fri 9am 16
domain, t3 ends-by tue 12pm 10
domain, t4 ends-by wed 11am 20
domain, t5 ends-by wed 11am 20
domain, t6 ends-by mon 2pm 6
Splitting t1 into {35, 4, 37, 5, 36, 11, 12} and {13, 19, 20, 21, 27, 28, 29}
Splitting t1 into {35, 4, 37} and {12, 11, 36, 5}
Splitting t1 into {35} and {4, 37}
Splitting t1 into {4} and {37}

Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t3 into {2, 3} and {4, 5}
Splitting t3 into {2} and {3}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 2
task, t6 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t1 same-day t6
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t2 after t5
domain, t2 ends-by mon 3pm 15
domain, t3 ends-by mon 9am 13
domain, t4 ends-by thu 1pm 18
domain, t5 ends-by fri 2pm 19
domain, t6 ends-by tue 1pm 9
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {16, 17, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {3, 4} and {5, 6}
Splitting t3 into {3} and {4}
Splitting t4 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34, 35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t4 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t4 into {8, 9, 10} and {11, 12, 13}
Splitting t4 into {8} and {9, 10}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t3
constraint, t3 before t6
domain, t6 thu
domain, t1 ends-by fri 10am 6

```
domain, t2 ends-by thu 9am 11
domain, t4 ends-by thu 9am 15
domain, t5 ends-by fri 11am 16
domain, t6 ends-by wed 10am 6
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t2 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t2 into {32, 33} and {34, 3}
Splitting t2 into {34} and {3}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t6 into {24} and {25, 26}
task, t1 3
task, t2 3
task, t3 4
task, t4 1
task, t5 4
task, t6 4
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t2 before t4
domain, t1 tue
domain, t2 ends-by wed 10am 14
domain, t3 ends-by mon 10am 10
domain, t4 ends-by mon 4pm 12
domain, t5 ends-by fri 9am 12
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t4 into {16, 17, 18, 19, 20, 21, 22, 24, 25, 26} and {32, 33, 34, 35, 3
6, 37, 38, 27, 28, 29, 30}
Splitting t4 into {16, 17, 18, 19, 20} and {21, 22, 24, 25, 26}
Splitting t4 into {16, 17} and {18, 19, 20}
Splitting t4 into {16} and {17}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t6 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t6 into {0, 1} and {8, 2, 3}
Splitting t6 into {0} and {1}
```

```
task, t1 2
task, t2 2
task, t3 1
task, t4 2
task, t5 2
task, t6 3
constraint, t1 before t3
constraint, t1 after t4
constraint, t1 before t5
constraint, t1 starts-at t6
constraint, t2 before t3
constraint, t2 after t5
constraint, t2 after t6
constraint, t3 after t6
constraint, t4 before t6
constraint, t5 before t6
domain, t3 tue
domain, t5 fri
domain, t1 ends-by thu 11am 14
domain, t2 ends-by wed 2pm 13
domain, t4 ends-by mon 3pm 11
domain, t5 ends-by wed 2pm 7
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 1
task, t6 3
constraint, t2 after t4
constraint, t2 after t5
domain, t3 ends-by mon 10am 15
domain, t5 ends-by thu 1pm 9
domain, t6 ends-by tue 12pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {2, 3} and {8, 9, 4}
Splitting t2 into {2} and {3}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t6 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t6 into {0, 1, 2} and {8, 3, 4}
Splitting t6 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 3
task, t4 3
task, t5 4
```

task, t6 1
constraint, t3 after t5
constraint, t4 before t5
constraint, t4 after t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 9am 19
domain, t4 ends-by mon 1pm 11
domain, t5 ends-by wed 1pm 17
domain, t6 ends-by mon 2pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34, 35, 36, 12, 16, 17} and {18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {32, 33, 34, 35} and {16, 17, 36, 12}
Splitting t3 into {32, 33} and {34, 35}
Splitting t3 into {32} and {33}
Splitting t4 into {1, 2, 3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19, 20, 24}
Splitting t4 into {1, 2, 3} and {8, 9, 10, 4}
Splitting t4 into {1} and {2, 3}
Splitting t5 into {8, 9, 10, 11, 16, 17} and {18, 19, 24, 25, 26, 27}
Splitting t5 into {8, 9, 10} and {16, 17, 11}
Splitting t5 into {8} and {9, 10}
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 1
task, t6 2
constraint, t1 after t5
constraint, t1 after t6
constraint, t2 after t5
constraint, t3 same-day t6
constraint, t4 after t5
domain, t6 wed
domain, t3 ends-by thu 4pm 9
domain, t5 ends-by tue 4pm 14
domain, t6 ends-by wed 1pm 18
Splitting t1 into {32, 33, 34, 35, 36, 37, 18, 19} and {20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {32, 33, 34, 35} and {18, 19, 36, 37}
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
Splitting t4 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,

34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t4 into {1} and {2, 3}
Splitting t6 into {16, 17, 18} and {19, 20, 21}
Splitting t6 into {16} and {17, 18}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 1
task, t6 2
constraint, t1 same-day t4
constraint, t2 after t6
constraint, t3 after t5
constraint, t3 same-day t6
domain, t1 ends-by fri 9am 20
domain, t2 ends-by fri 11am 20
domain, t3 ends-by fri 10am 14
domain, t4 ends-by fri 4pm 19
domain, t5 ends-by fri 1pm 20
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {1} and {2, 3}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 2
task, t4 1
task, t5 4
task, t6 4
constraint, t2 same-day t6
constraint, t5 before t6
domain, t2 fri
domain, t1 ends-by thu 11am 18
domain, t2 ends-by fri 3pm 15
domain, t4 ends-by fri 10am 13
domain, t5 ends-by fri 10am 8
domain, t6 ends-by mon 3pm 7
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33} and {34, 35, 36}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3 3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}

Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {32, 33} and {34, 35}
Splitting t6 into {32} and {33}
task, t1 3
task, t2 2
task, t3 2
task, t4 2
task, t5 1
task, t6 3
constraint, t3 after t6
constraint, t5 same-day t6
domain, t1 ends-by fri 9am 7
domain, t2 ends-by thu 9am 11
domain, t3 ends-by wed 4pm 15
domain, t4 ends-by thu 4pm 16
domain, t5 ends-by fri 3pm 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {3, 4, 5} and {8, 9, 10}
Splitting t3 into {3} and {4, 5}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 after t3
constraint, t2 same-day t5
constraint, t3 same-day t5
constraint, t4 before t6
constraint, t5 same-day t6

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domain, t1 ends-by fri 11am 13
domain, t3 ends-by thu 3pm 16
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 11am 14
domain, t6 ends-by wed 1pm 15
Splitting t1 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t1 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {1, 2} and {3, 4}
Splitting t2 into {1} and {2}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 1
task, t3 1
task, t4 1
task, t5 1
task, t6 1
constraint, t1 starts-at t4
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t3 same-day t6
constraint, t4 before t6
constraint, t5 before t6
domain, t1 thu
domain, t4 tue
domain, t1 ends-by thu 10am 15
domain, t4 ends-by thu 4pm 14
domain, t5 ends-by tue 3pm 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 4
task, t3 1
task, t4 3
task, t5 2
task, t6 2
constraint, t1 starts-at t6
constraint, t2 same-day t5
constraint, t4 after t5
constraint, t5 before t6
domain, t1 fri
domain, t4 thu
domain, t5 tue
domain, t1 ends-by mon 4pm 11
domain, t3 ends-by wed 9am 16
domain, t4 ends-by thu 10am 7
domain, t6 ends-by thu 3pm 11
Splitting t1 into {34} and {35, 36}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
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Splitting t3 into {0} and {1}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
Splitting t5 into {8, 9, 10} and {11, 12, 13}
Splitting t5 into {8} and {9, 10}
task, t1 3
task, t2 3
task, t3 1
task, t4 4
task, t5 4
task, t6 3
constraint, t1 after t2
constraint, t1 same-day t6
constraint, t2 before t3
constraint, t2 after t5
constraint, t3 after t6
domain, t1 tue
domain, t3 mon
domain, t4 fri
domain, t6 wed
domain, t1 ends-by mon 9am 17
domain, t2 ends-by thu 12pm 19
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by thu 11am 6
domain, t5 ends-by tue 9am 6
domain, t6 ends-by wed 4pm 11
Splitting t4 into {32, 33} and {34, 35}
... t4 in {32, 33} has no solution
... t4 in {34, 35} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 4
task, t6 2
constraint, t2 before t3
domain, t5 tue
domain, t1 ends-by mon 10am 10
domain, t2 ends-by mon 12pm 7
domain, t4 ends-by mon 3pm 12
domain, t5 ends-by thu 9am 19
domain, t6 ends-by thu 1pm 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 34, 17, 18,
19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {3, 4, 5} and {8, 9, 10}
Splitting t3 into {3} and {4, 5}
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Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {8, 9} and {10, 11}
Splitting t5 into {8} and {9}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 4
task, t4 4
task, t5 4
task, t6 3
constraint, t1 same-day t2
constraint, t1 same-day t6
constraint, t2 after t4
domain, t1 ends-by fri 3pm 16
domain, t2 ends-by fri 4pm 10
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by tue 9am 6
domain, t5 ends-by tue 11am 7
domain, t6 ends-by wed 1pm 10
Splitting t1 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t1 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {8, 9} and {10, 11, 12}
Splitting t6 into {8} and {9}
task, t1 4
task, t2 2
task, t3 2
task, t4 4
task, t5 4
task, t6 4
constraint, t2 after t6
constraint, t3 same-day t6
domain, t5 mon
domain, t2 ends-by wed 4pm 8
domain, t3 ends-by tue 10am 20
domain, t4 ends-by thu 11am 7
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domain, t5 ends-by thu 10am 16
domain, t6 ends-by fri 10am 17
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t2 into {8, 4, 5} and {9, 10, 11}
Splitting t2 into {8} and {4, 5}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
task, t5 3
task, t6 1
constraint, t1 after t5
constraint, t2 before t5
constraint, t2 same-day t6
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t3 same-day t6
constraint, t4 before t5
domain, t1 wed
domain, t2 thu
domain, t4 fri
domain, t1 ends-by fri 9am 18
domain, t2 ends-by tue 11am 10
domain, t3 ends-by thu 10am 7
domain, t5 ends-by wed 9am 9
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 3
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t2
constraint, t1 after t3
constraint, t1 before t5
constraint, t1 before t6
constraint, t2 after t3
constraint, t3 starts-at t4
domain, t2 tue
domain, t4 wed
domain, t1 ends-by wed 2pm 14
domain, t2 ends-by mon 9am 20
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domain, t3 ends-by tue 11am 6
domain, t4 ends-by mon 3pm 7
domain, t5 ends-by mon 4pm 12
domain, t6 ends-by wed 1pm 6
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 3
constraint, t1 after t3
constraint, t5 before t6
domain, t3 tue
domain, t5 ends-by tue 11am 16
domain, t6 ends-by fri 12pm 16
Splitting t1 into {11, 12, 13, 16, 17, 18, 19, 20, 21, 24} and {32, 33, 34, 35, 3
6, 37, 25, 26, 27, 28, 29}
Splitting t1 into {11, 12, 13, 16, 17} and {18, 19, 20, 21, 24}
Splitting t1 into {11, 12} and {16, 17, 13}
Splitting t1 into {11} and {12}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
Splitting t6 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t6 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t6 into {3, 4} and {8, 9, 10}
Splitting t6 into {3} and {4}
task, t1 1
task, t2 3
task, t3 1
task, t4 2
task, t5 2
task, t6 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t1 same-day t5
constraint, t3 before t5
constraint, t5 before t6
domain, t3 fri
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by wed 4pm 11
domain, t5 ends-by tue 2pm 14
domain, t6 ends-by tue 10am 16
Splitting t1 into {32} and {33, 34}
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Splitting t2 into {33, 34} and {35, 36}
Splitting t2 into {33} and {34}
Splitting t3 into {33} and {34, 35}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {34} and {35, 36}
Splitting t6 into {36} and {37, 38}
task, t1 1
task, t2 1
task, t3 4
task, t4 2
task, t5 2
task, t6 3
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t3 same-day t6
constraint, t4 starts-at t5
constraint, t5 same-day t6
domain, t1 ends-by tue 10am 9
domain, t2 ends-by mon 1pm 9
domain, t3 ends-by wed 12pm 19
domain, t4 ends-by tue 10am 5
domain, t6 ends-by tue 3pm 16
Splitting t1 into {4, 5, 6, 36, 12, 13} and {14, 20, 21, 22, 28, 29, 30}
Splitting t1 into {4, 5, 6} and {13, 36, 12}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3, 4}
Splitting t6 into {0} and {1}
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 1
task, t6 1
constraint, t2 starts-at t4
constraint, t3 same-day t4
constraint, t4 same-day t5
domain, t1 wed
domain, t5 wed
domain, t1 ends-by wed 4pm 5
domain, t4 ends-by tue 3pm 10
domain, t5 ends-by tue 2pm 15
domain, t6 ends-by thu 10am 14
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
Splitting t5 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t5 into {16} and {17, 18}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}

Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t6 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 4
task, t2 4
task, t3 1
task, t4 1
task, t5 3
task, t6 1
constraint, t1 before t2
constraint, t1 after t3
constraint, t1 before t6
constraint, t4 before t6
constraint, t5 before t6
domain, t1 ends-by fri 11am 9
domain, t2 ends-by thu 10am 11
domain, t3 ends-by fri 9am 8
domain, t4 ends-by mon 12pm 6
domain, t5 ends-by tue 4pm 8
Splitting t1 into {1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {3
2, 33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {5, 6, 8, 9, 10, 11, 12} and {13, 14, 16, 17, 18, 19, 20, 21}
Splitting t6 into {8, 5, 6} and {9, 10, 11, 12}
Splitting t6 into {8} and {5, 6}
task, t1 1
task, t2 1
task, t3 3
task, t4 3
task, t5 1
task, t6 2
constraint, t1 before t5
constraint, t2 after t3
domain, t4 thu
domain, t1 ends-by thu 9am 7
domain, t2 ends-by thu 4pm 15
domain, t3 ends-by fri 4pm 11
domain, t4 ends-by thu 9am 10
domain, t5 ends-by fri 10am 17

```
domain, t6 ends-by mon 12pm 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
Splitting t5 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} an
d {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 1
9}
Splitting t5 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t5 into {1, 2} and {3, 4}
Splitting t5 into {1} and {2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 1
task, t4 4
task, t5 1
task, t6 3
constraint, t1 before t4
constraint, t3 before t4
constraint, t3 after t6
constraint, t4 after t5
constraint, t5 after t6
domain, t1 thu
domain, t6 wed
domain, t1 ends-by wed 11am 10
domain, t2 ends-by thu 9am 16
domain, t3 ends-by tue 3pm 6
domain, t5 ends-by fri 10am 15
domain, t6 ends-by tue 4pm 16
Splitting t1 into {24, 25} and {26, 27}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {32, 33, 34, 19, 20, 21, 22} and {24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {32, 33, 34} and {19, 20, 21, 22}
Splitting t3 into {19, 20} and {21, 22}
Splitting t3 into {19} and {20}
Splitting t4 into {32, 33} and {34, 35}
Splitting t4 into {32} and {33}
Splitting t5 into {19, 20, 21, 22, 24} and {25, 26, 27, 28, 29, 30}
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Splitting t5 into {19, 20} and {24, 21, 22}
Splitting t5 into {19} and {20}
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 4
task, t6 2
constraint, t1 same-day t2
constraint, t1 starts-at t3
constraint, t3 same-day t4
constraint, t3 before t5
constraint, t5 same-day t6
domain, t1 wed
domain, t5 wed
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by mon 2pm 17
domain, t4 ends-by tue 9am 7
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 4
task, t4 4
task, t5 3
task, t6 2
constraint, t1 after t6
constraint, t2 same-day t6
constraint, t3 same-day t5
constraint, t4 starts-at t6
domain, t1 fri
domain, t3 fri
domain, t1 ends-by tue 1pm 18
domain, t2 ends-by wed 9am 12
domain, t3 ends-by thu 9am 19
domain, t5 ends-by fri 4pm 7
domain, t6 ends-by tue 3pm 8
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {32, 33} and {34, 35}
Splitting t3 into {32} and {33}
Splitting t4 into {2} and {3}
Splitting t5 into {32, 33} and {34, 35, 36}
Splitting t5 into {32} and {33}
task, t1 4
task, t2 3
task, t3 3
task, t4 3
task, t5 3
task, t6 1
constraint, t1 same-day t3
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 same-day t5
constraint, t4 after t6
domain, t1 ends-by mon 4pm 5
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```
domain, t3 ends-by fri 11am 5
domain, t4 ends-by wed 12pm 12
domain, t6 ends-by mon 9am 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t4 into {1, 2} and {3, 4}
Splitting t4 into {1} and {2}
task, t1 3
task, t2 3
task, t3 4
task, t4 1
task, t5 3
task, t6 2
constraint, t1 same-day t6
constraint, t2 after t5
constraint, t2 before t6
domain, t1 ends-by fri 11am 12
domain, t2 ends-by fri 1pm 13
domain, t3 ends-by wed 4pm 20
domain, t4 ends-by tue 3pm 9
domain, t6 ends-by wed 1pm 5
Splitting t1 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t1 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t6 into {8, 9, 10} and {11, 12, 13}
Splitting t6 into {8} and {9, 10}
task, t1 2
task, t2 3
task, t3 2
task, t4 1
task, t5 1
task, t6 3
constraint, t1 before t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t3 same-day t6
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domain, t1 wed
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by thu 12pm 18
domain, t3 ends-by mon 4pm 13
domain, t4 ends-by tue 4pm 11
domain, t5 ends-by tue 11am 20
domain, t6 ends-by tue 11am 13
Splitting t1 into {16, 17, 18} and {19, 20, 21}
Splitting t1 into {16} and {17, 18}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34, 35, 36, 37, 19} and {20, 21, 24, 25, 26, 27, 28, 2
9}
Splitting t3 into {32, 33, 34} and {19, 35, 36, 37}
Splitting t3 into {35, 19} and {36, 37}
Splitting t3 into {35} and {19}
Splitting t4 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t4 into {16} and {17, 18}
Splitting t6 into {16, 17} and {18, 19, 20}
Splitting t6 into {16} and {17}
task, t1 2
task, t2 2
task, t3 1
task, t4 2
task, t5 3
task, t6 4
constraint, t1 before t5
constraint, t2 before t5
constraint, t2 after t6
constraint, t4 after t6
domain, t4 tue
domain, t1 ends-by wed 2pm 6
domain, t2 ends-by mon 1pm 19
domain, t3 ends-by wed 10am 6
domain, t4 ends-by mon 4pm 6
domain, t5 ends-by mon 11am 16
domain, t6 ends-by tue 4pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18}
Splitting t2 into {4, 5} and {8, 9, 10}
Splitting t2 into {4} and {5}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {8, 9, 10} and {11, 12, 13}
Splitting t4 into {8} and {9, 10}
Splitting t5 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
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24, 25, 26, 27, 28}
Splitting t5 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t5 into {8, 9} and {10, 11, 12}
Splitting t5 into {8} and {9}
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 4
task, t6 2
constraint, t1 before t4
constraint, t5 same-day t6
domain, t4 thu
domain, t6 mon
domain, t1 ends-by fri 1pm 9
domain, t3 ends-by thu 1pm 11
domain, t4 ends-by tue 12pm 14
domain, t5 ends-by thu 3pm 12
domain, t6 ends-by fri 9am 19
Splitting t1 into {0, 1, 2, 3, 8, 9} and {10, 11, 16, 17, 18, 19}
Splitting t1 into {0, 1, 2} and {8, 9, 3}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {24, 25} and {26, 27}
Splitting t4 into {24} and {25}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2} and {3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 2
task, t6 4
constraint, t1 before t6
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 same-day t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t3 thu
domain, t1 ends-by thu 1pm 5
domain, t2 ends-by fri 1pm 11
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by mon 4pm 10
domain, t6 ends-by mon 10am 8
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 1

```
task, t4 1
task, t5 4
task, t6 2
constraint, t1 same-day t5
constraint, t3 same-day t6
constraint, t4 before t5
domain, t1 ends-by wed 3pm 9
domain, t2 ends-by fri 9am 13
domain, t3 ends-by thu 12pm 5
domain, t4 ends-by fri 3pm 13
domain, t5 ends-by tue 11am 9
domain, t6 ends-by thu 9am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {1} and {2, 3}
Splitting t6 into {0, 1, 2} and {3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 4
task, t4 4
task, t5 3
task, t6 1
constraint, t1 same-day t5
constraint, t2 before t4
constraint, t3 before t4
domain, t5 mon
domain, t1 ends-by thu 4pm 17
domain, t2 ends-by fri 4pm 5
domain, t3 ends-by wed 1pm 16
domain, t4 ends-by thu 12pm 6
domain, t5 ends-by wed 4pm 6
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
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Splitting t3 into {0} and {1}
Splitting t4 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t4 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t4 into {32, 33} and {34, 35}
Splitting t4 into {32} and {33}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t6 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 4
task, t6 1
constraint, t1 after t4
constraint, t2 after t3
constraint, t3 before t6
domain, t2 tue
domain, t3 tue
domain, t3 ends-by tue 12pm 11
domain, t4 ends-by thu 10am 13
domain, t5 ends-by mon 4pm 20
domain, t6 ends-by thu 3pm 11
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 19}
Splitting t1 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t1 into {1, 2} and {3, 4}
Splitting t1 into {1} and {2}
Splitting t2 into {11} and {12, 13}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24} and {32, 33, 34, 35, 36, 37, 38, 25, 26, 27, 28, 29, 30}
Splitting t6 into {11, 12, 13, 14, 16, 17} and {18, 19, 20, 21, 22, 24}
Splitting t6 into {11, 12, 13} and {16, 17, 14}
Splitting t6 into {11} and {12, 13}
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 2
task, t6 3
constraint, t3 after t6
constraint, t5 before t6
domain, t4 thu
domain, t5 thu
domain, t1 ends-by mon 11am 6
domain, t2 ends-by wed 4pm 7

```
domain, t4 ends-by mon 1pm 18
domain, t5 ends-by wed 12pm 10
domain, t6 ends-by thu 4pm 19
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33} and {34, 35, 36}
Splitting t3 into {32} and {33}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
Splitting t5 into {24} and {25, 26}
Splitting t6 into {26} and {27, 28}
task, t1 1
task, t2 2
task, t3 4
task, t4 4
task, t5 1
task, t6 2
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 same-day t5
domain, t3 mon
domain, t4 fri
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by thu 2pm 16
domain, t3 ends-by thu 1pm 15
domain, t4 ends-by wed 1pm 7
domain, t5 ends-by wed 2pm 9
domain, t6 ends-by wed 2pm 7
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 1
task, t6 1
constraint, t1 after t2
constraint, t1 after t4
constraint, t4 after t5
domain, t4 fri
domain, t1 ends-by wed 3pm 20
domain, t2 ends-by wed 1pm 19
domain, t3 ends-by tue 2pm 8
domain, t4 ends-by thu 3pm 5
domain, t5 ends-by fri 1pm 9
domain, t6 ends-by thu 12pm 8
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
```

{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14} and {16, 17, 1
8, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t6 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 4
task, t2 2
task, t3 1
task, t4 3
task, t5 1
task, t6 4
constraint, t2 same-day t3
constraint, t2 starts-at t6
constraint, t3 after t5
constraint, t4 before t6
domain, t1 ends-by fri 4pm 17
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by wed 2pm 12
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by tue 10am 5
domain, t6 ends-by mon 9am 15
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {12, 13, 36, 37} and {28, 29, 20, 21}
Splitting t2 into {12, 13} and {36, 37}
Splitting t2 into {12} and {13}
Splitting t3 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 3
task, t4 3
task, t5 3
task, t6 2
constraint, t1 before t3
constraint, t1 before t4
constraint, t1 same-day t6
constraint, t2 same-day t6
constraint, t3 after t6
constraint, t4 before t5

```
constraint, t5 same-day t6
domain, t1 ends-by thu 11am 17
domain, t2 ends-by wed 3pm 14
domain, t3 ends-by thu 3pm 5
domain, t4 ends-by thu 12pm 14
domain, t6 ends-by fri 11am 9
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 1
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t1 after t4
domain, t1 wed
domain, t2 thu
domain, t1 ends-by thu 9am 16
domain, t3 ends-by mon 2pm 15
domain, t4 ends-by tue 10am 19
domain, t5 ends-by fri 2pm 10
Splitting t1 into {16, 17} and {18, 19, 20}
Splitting t1 into {16} and {17}
Splitting t2 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 3
task, t4 2
task, t5 4
task, t6 2
constraint, t3 after t6
constraint, t4 after t5
domain, t1 ends-by fri 10am 10
domain, t2 ends-by thu 10am 9
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by wed 9am 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
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24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t3 into {2, 3} and {8, 9, 4}
Splitting t3 into {2} and {3}
Splitting t4 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t4 into {8, 4, 5} and {9, 10, 11}
Splitting t4 into {8} and {4, 5}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 1
task, t2 4
task, t3 2
task, t4 3
task, t5 4
task, t6 2
constraint, t1 after t6
constraint, t2 before t3
domain, t3 tue
domain, t4 wed
domain, t1 ends-by wed 11am 11
domain, t2 ends-by wed 12pm 12
domain, t5 ends-by tue 3pm 16
domain, t6 ends-by fri 10am 16
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t1 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t1 into {2, 3} and {4, 5}
Splitting t1 into {2} and {3}
Splitting t2 into {0, 1, 2} and {8, 9, 3}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9, 10} and {11, 12, 13}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {16, 17} and {18, 19, 20}
Splitting t4 into {16} and {17}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 1
task, t3 2
task, t4 3
task, t5 2
task, t6 4
constraint, t1 before t3
constraint, t1 after t6
constraint, t2 before t3
constraint, t2 same-day t4
constraint, t3 same-day t6
constraint, t5 before t6
domain, t1 ends-by tue 12pm 20

domain, t2 ends-by mon 9am 15
domain, t4 ends-by tue 4pm 19
domain, t5 ends-by wed 10am 15
domain, t6 ends-by fri 11am 20
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 2
task, t6 1
constraint, t1 before t5
constraint, t1 starts-at t6
constraint, t2 before t3
constraint, t4 after t5
domain, t1 thu
domain, t3 tue
domain, t4 tue
domain, t1 ends-by fri 3pm 17
domain, t6 ends-by wed 2pm 12
Splitting t2 into {0, 1, 2, 3} and {8, 9, 4, 5}
... t2 in {0, 1, 2, 3} has no solution
... t2 in {8, 9, 4, 5} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 3
task, t4 3
task, t5 3
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 after t6
constraint, t4 starts-at t5
domain, t4 tue
domain, t6 wed
domain, t1 ends-by fri 10am 9
domain, t2 ends-by thu 11am 18
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by tue 11am 17
domain, t5 ends-by thu 2pm 8
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 3
task, t6 2
constraint, t1 same-day t5
constraint, t1 after t6
constraint, t3 before t5
constraint, t3 same-day t6
constraint, t5 before t6
domain, t2 wed
domain, t3 fri
domain, t1 ends-by thu 4pm 17
domain, t3 ends-by thu 12pm 19
domain, t4 ends-by fri 3pm 11
domain, t5 ends-by wed 12pm 16

```
domain, t6 ends-by wed 3pm 15
Splitting t2 into {16, 17, 18} and {19, 20, 21, 22}
... t2 in {16, 17, 18} has no solution
... t2 in {19, 20, 21, 22} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 2
task, t3 2
task, t4 1
task, t5 3
task, t6 2
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
domain, t1 wed
domain, t2 thu
domain, t1 ends-by mon 11am 13
domain, t2 ends-by mon 12pm 14
domain, t3 ends-by thu 11am 14
domain, t4 ends-by tue 11am 14
domain, t5 ends-by wed 3pm 6
Splitting t1 into {16, 17, 18} and {19, 20, 21}
Splitting t1 into {16} and {17, 18}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,
34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t3 into {1} and {2, 3}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {32, 33, 34, 35, 36} and {37, 26, 27, 28, 29}
Splitting t6 into {32, 33} and {34, 35, 36}
Splitting t6 into {32} and {33}
task, t1 1
task, t2 3
task, t3 1
task, t4 3
task, t5 3
task, t6 4
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t2 before t6
domain, t3 tue
domain, t1 ends-by mon 12pm 18
domain, t2 ends-by tue 3pm 18
domain, t3 ends-by wed 9am 15
domain, t4 ends-by fri 3pm 7
domain, t5 ends-by thu 2pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5} and {6, 8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t3 into {8, 9, 10} and {11, 12, 13, 14}
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Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {32, 33, 34, 35, 11, 16} and {17, 18, 19, 24, 25, 26, 27}
Splitting t6 into {32, 33, 34} and {11, 16, 35}
Splitting t6 into {32} and {33, 34}
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 1
task, t6 1
constraint, t2 same-day t3
constraint, t2 same-day t5
constraint, t3 before t6
domain, t1 ends-by fri 12pm 9
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by wed 2pm 11
domain, t5 ends-by tue 10am 12
domain, t6 ends-by thu 10am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t6 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t6 into {4} and {5, 6}
task, t1 2
task, t2 3
task, t3 3
task, t4 2
task, t5 3
task, t6 3
constraint, t1 before t2
constraint, t1 starts-at t3
constraint, t1 starts-at t5
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```
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t2 after t6
constraint, t3 before t5
constraint, t4 after t5
constraint, t5 same-day t6
domain, t2 tue
domain, t4 wed
domain, t1 ends-by tue 9am 11
domain, t2 ends-by wed 9am 5
domain, t3 ends-by fri 2pm 19
domain, t4 ends-by fri 9am 19
domain, t5 ends-by tue 4pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 1
task, t5 4
task, t6 1
constraint, t1 same-day t4
constraint, t1 after t5
constraint, t3 same-day t4
constraint, t3 before t5
constraint, t4 before t6
constraint, t5 after t6
domain, t1 ends-by mon 1pm 18
domain, t2 ends-by fri 12pm 9
domain, t3 ends-by thu 11am 6
domain, t4 ends-by fri 11am 15
domain, t5 ends-by tue 12pm 5
domain, t6 ends-by tue 3pm 18
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
... t2 in {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} has no solution
... t2 in {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 2
task, t4 3
task, t5 3
task, t6 2
constraint, t1 before t4
constraint, t2 after t6
constraint, t4 after t5
domain, t1 ends-by thu 1pm 16
domain, t2 ends-by tue 2pm 11
domain, t3 ends-by fri 12pm 14
domain, t4 ends-by fri 3pm 5
domain, t5 ends-by wed 12pm 8
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
```

```
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t4 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t4 into {3, 4} and {8, 9, 10}
Splitting t4 into {3} and {4}
task, t1 2
task, t2 3
task, t3 4
task, t4 1
task, t5 2
task, t6 2
constraint, t1 same-day t4
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t4
constraint, t3 same-day t6
domain, t1 ends-by wed 3pm 15
domain, t2 ends-by mon 10am 11
domain, t3 ends-by mon 3pm 19
domain, t4 ends-by thu 1pm 13
domain, t5 ends-by thu 9am 7
domain, t6 ends-by thu 12pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 34, 17, 18,
19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {4} and {5, 6}
Splitting t5 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {3, 4, 5} and {8, 9, 10}
Splitting t5 into {3} and {4, 5}
Splitting t6 into {0, 1, 2} and {3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 3
task, t4 2
task, t5 1
task, t6 1
constraint, t1 before t6
constraint, t2 starts-at t5
constraint, t3 before t5
domain, t1 wed
domain, t1 ends-by wed 11am 5
domain, t2 ends-by tue 11am 16
domain, t3 ends-by wed 10am 5
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domain, t5 ends-by wed 1pm 15
domain, t6 ends-by thu 12pm 9
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {33, 34, 35, 4, 36, 9, 10, 11} and {12, 17, 18, 19, 20, 25, 26,
27, 28}
Splitting t2 into {33, 34, 35, 4} and {9, 10, 11, 36}
Splitting t2 into {33, 34} and {35, 4}
Splitting t2 into {33} and {34}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {16, 17, 18, 19, 20, 24,
25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t6 into {32, 33, 34, 35, 36, 37, 38, 20} and {21, 22, 24, 25, 26, 27, 2
8, 29, 30}
Splitting t6 into {32, 33, 34, 35} and {20, 36, 37, 38}
Splitting t6 into {32, 33} and {34, 35}
Splitting t6 into {32} and {33}
task, t1 1
task, t2 4
task, t3 3
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 same-day t4
constraint, t3 same-day t6
domain, t3 mon
domain, t1 ends-by mon 12pm 18
domain, t2 ends-by tue 1pm 9
domain, t3 ends-by fri 2pm 17
domain, t4 ends-by mon 1pm 9
Splitting t1 into {6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {32,
33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {6, 8, 9, 10, 11, 12, 13} and {14, 16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 6} and {10, 11, 12, 13}
Splitting t1 into {8} and {9, 6}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {4} and {5}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3, 4}
Splitting t6 into {0} and {1}
task, t1 3
task, t2 2
task, t3 2
task, t4 1
task, t5 3
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```
task, t6 2
constraint, t1 after t2
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t2 ends-by thu 10am 10
domain, t3 ends-by wed 12pm 9
domain, t5 ends-by wed 3pm 10
Splitting t1 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {2, 3} and {8, 9, 4}
Splitting t1 into {2} and {3}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 1
task, t6 1
constraint, t1 starts-at t2
constraint, t2 after t6
constraint, t3 after t4
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by fri 9am 16
domain, t3 ends-by tue 12pm 10
domain, t4 ends-by wed 11am 20
domain, t5 ends-by wed 11am 20
domain, t6 ends-by mon 2pm 6
Splitting t1 into {35, 4, 37, 5, 36, 11, 12} and {13, 19, 20, 21, 27, 28, 29}
Splitting t1 into {35, 4, 37} and {12, 11, 36, 5}
Splitting t1 into {35} and {4, 37}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t3 into {2, 3} and {4, 5}
Splitting t3 into {2} and {3}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14} and {16, 17, 1
8, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
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Splitting t6 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 2
task, t6 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t1 same-day t6
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t2 after t5
domain, t2 ends-by mon 3pm 15
domain, t3 ends-by mon 9am 13
domain, t4 ends-by thu 1pm 18
domain, t5 ends-by fri 2pm 19
domain, t6 ends-by tue 1pm 9
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {16, 17, 18, 19, 20, 24,
25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 19, 20, 2
4, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {3, 4} and {5, 6}
Splitting t3 into {3} and {4}
Splitting t4 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t4 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t4 into {8, 9, 10} and {11, 12, 13}
Splitting t4 into {8} and {9, 10}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t3
constraint, t3 before t6
domain, t6 thu
domain, t1 ends-by fri 10am 6
domain, t2 ends-by thu 9am 11
domain, t4 ends-by thu 9am 15
domain, t5 ends-by fri 11am 16
domain, t6 ends-by wed 10am 6
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
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Splitting t2 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t2 into {32, 33} and {34, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11} and {12, 16, 17, 18, 19, 20, 24,
25, 26, 27}
Splitting t3 into {0, 1, 2, 3} and {4, 8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t6 into {24} and {25, 26}
task, t1 3
task, t2 3
task, t3 4
task, t4 1
task, t5 4
task, t6 4
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t2 before t4
domain, t1 tue
domain, t2 ends-by wed 10am 14
domain, t3 ends-by mon 10am 10
domain, t4 ends-by mon 4pm 12
domain, t5 ends-by fri 9am 12
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t4 into {16, 17, 18, 19, 20, 21, 22, 24, 25, 26} and {32, 33, 34, 35, 3
6, 37, 38, 27, 28, 29, 30}
Splitting t4 into {16, 17, 18, 19, 20} and {21, 22, 24, 25, 26}
Splitting t4 into {16, 17} and {18, 19, 20}
Splitting t4 into {16} and {17}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t6 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t6 into {0, 1} and {8, 2, 3}
Splitting t6 into {0} and {1}
task, t1 2
task, t2 2
task, t3 1
task, t4 2
task, t5 2
task, t6 3
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```
constraint, t1 before t3
constraint, t1 after t4
constraint, t1 before t5
constraint, t1 starts-at t6
constraint, t2 before t3
constraint, t2 after t5
constraint, t2 after t6
constraint, t3 after t6
constraint, t4 before t6
constraint, t5 before t6
domain, t3 tue
domain, t5 fri
domain, t1 ends-by thu 11am 14
domain, t2 ends-by wed 2pm 13
domain, t4 ends-by mon 3pm 11
domain, t5 ends-by wed 2pm 7
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 1
task, t6 3
constraint, t2 after t4
constraint, t2 after t5
domain, t3 ends-by mon 10am 15
domain, t5 ends-by thu 1pm 9
domain, t6 ends-by tue 12pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35, 3
6, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {2, 3} and {8, 9, 4}
Splitting t2 into {2} and {3}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t6 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t6 into {0, 1, 2} and {8, 3, 4}
Splitting t6 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 3
task, t4 3
task, t5 4
task, t6 1
constraint, t3 after t5
constraint, t4 before t5
constraint, t4 after t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 9am 19
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domain, t4 ends-by mon 1pm 11
domain, t5 ends-by wed 1pm 17
domain, t6 ends-by mon 2pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34, 35, 36, 12, 16, 17} and {18, 19, 20, 24, 25, 26, 2
7, 28}
Splitting t3 into {32, 33, 34, 35} and {16, 17, 36, 12}
Splitting t3 into {32, 33} and {34, 35}
Splitting t3 into {32} and {33}
Splitting t4 into {1, 2, 3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19, 20, 24}
Splitting t4 into {1, 2, 3} and {8, 9, 10, 4}
Splitting t4 into {1} and {2, 3}
Splitting t5 into {8, 9, 10, 11, 16, 17} and {18, 19, 24, 25, 26, 27}
Splitting t5 into {8, 9, 10} and {16, 17, 11}
Splitting t5 into {8} and {9, 10}
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 1
task, t6 2
constraint, t1 after t5
constraint, t1 after t6
constraint, t2 after t5
constraint, t3 same-day t6
constraint, t4 after t5
domain, t6 wed
domain, t3 ends-by thu 4pm 9
domain, t5 ends-by tue 4pm 14
domain, t6 ends-by wed 1pm 18
Splitting t1 into {32, 33, 34, 35, 36, 37, 18, 19} and {20, 21, 24, 25, 26, 27, 2
8, 29}
Splitting t1 into {32, 33, 34, 35} and {18, 19, 36, 37}
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
Splitting t4 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,
34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t4 into {1} and {2, 3}
Splitting t6 into {16, 17, 18} and {19, 20, 21}
Splitting t6 into {16} and {17, 18}
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```
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 1
task, t6 2
constraint, t1 same-day t4
constraint, t2 after t6
constraint, t3 after t5
constraint, t3 same-day t6
domain, t1 ends-by fri 9am 20
domain, t2 ends-by fri 11am 20
domain, t3 ends-by fri 10am 14
domain, t4 ends-by fri 4pm 19
domain, t5 ends-by fri 1pm 20
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {1} and {2, 3}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 2
task, t4 1
task, t5 4
task, t6 4
constraint, t2 same-day t6
constraint, t5 before t6
domain, t2 fri
domain, t1 ends-by thu 11am 18
domain, t2 ends-by fri 3pm 15
domain, t4 ends-by fri 10am 13
domain, t5 ends-by fri 10am 8
domain, t6 ends-by mon 3pm 7
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33} and {34, 35, 36}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
```

Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {32, 33} and {34, 35}
Splitting t6 into {32} and {33}
task, t1 3
task, t2 2
task, t3 2
task, t4 2
task, t5 1
task, t6 3
constraint, t3 after t6
constraint, t5 same-day t6
domain, t1 ends-by fri 9am 7
domain, t2 ends-by thu 9am 11
domain, t3 ends-by wed 4pm 15
domain, t4 ends-by thu 4pm 16
domain, t5 ends-by fri 3pm 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {3, 4, 5} and {8, 9, 10}
Splitting t3 into {3} and {4, 5}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 after t3
constraint, t2 same-day t5
constraint, t3 same-day t5
constraint, t4 before t6
constraint, t5 same-day t6
domain, t1 ends-by fri 11am 13
domain, t3 ends-by thu 3pm 16
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 11am 14
domain, t6 ends-by wed 1pm 15
Splitting t1 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,

35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t1 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {1, 2} and {3, 4}
Splitting t2 into {1} and {2}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 1
task, t3 1
task, t4 1
task, t5 1
task, t6 1
constraint, t1 starts-at t4
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t3 same-day t6
constraint, t4 before t6
constraint, t5 before t6
domain, t1 thu
domain, t4 tue
domain, t1 ends-by thu 10am 15
domain, t4 ends-by thu 4pm 14
domain, t5 ends-by tue 3pm 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 4
task, t3 1
task, t4 3
task, t5 2
task, t6 2
constraint, t1 starts-at t6
constraint, t2 same-day t5
constraint, t4 after t5
constraint, t5 before t6
domain, t1 fri
domain, t4 thu
domain, t5 tue
domain, t1 ends-by mon 4pm 11
domain, t3 ends-by wed 9am 16
domain, t4 ends-by thu 10am 7
domain, t6 ends-by thu 3pm 11
Splitting t1 into {34} and {35, 36}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
Splitting t5 into {8, 9, 10} and {11, 12, 13}
Splitting t5 into {8} and {9, 10}
task, t1 3

```
task, t2 3
task, t3 1
task, t4 4
task, t5 4
task, t6 3
constraint, t1 after t2
constraint, t1 same-day t6
constraint, t2 before t3
constraint, t2 after t5
constraint, t3 after t6
domain, t1 tue
domain, t3 mon
domain, t4 fri
domain, t6 wed
domain, t1 ends-by mon 9am 17
domain, t2 ends-by thu 12pm 19
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by thu 11am 6
domain, t5 ends-by tue 9am 6
domain, t6 ends-by wed 4pm 11
Splitting t4 into {32, 33} and {34, 35}
... t4 in {32, 33} has no solution
... t4 in {34, 35} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 4
task, t6 2
constraint, t2 before t3
domain, t5 tue
domain, t1 ends-by mon 10am 10
domain, t2 ends-by mon 12pm 7
domain, t4 ends-by mon 3pm 12
domain, t5 ends-by thu 9am 19
domain, t6 ends-by thu 1pm 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 34, 17, 18,
19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t3 into {3, 4, 5} and {8, 9, 10}
Splitting t3 into {3} and {4, 5}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {8, 9} and {10, 11}
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Splitting t5 into {8} and {9}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 4
task, t4 4
task, t5 4
task, t6 3
constraint, t1 same-day t2
constraint, t1 same-day t6
constraint, t2 after t4
domain, t1 ends-by fri 3pm 16
domain, t2 ends-by fri 4pm 10
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by tue 9am 6
domain, t5 ends-by tue 11am 7
domain, t6 ends-by wed 1pm 10
Splitting t1 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t1 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t5 into {0, 1} and {8, 2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {8, 9} and {10, 11, 12}
Splitting t6 into {8} and {9}
task, t1 4
task, t2 2
task, t3 2
task, t4 4
task, t5 4
task, t6 4
constraint, t2 after t6
constraint, t3 same-day t6
domain, t5 mon
domain, t2 ends-by wed 4pm 8
domain, t3 ends-by tue 10am 20
domain, t4 ends-by thu 11am 7
domain, t5 ends-by thu 10am 16
domain, t6 ends-by fri 10am 17
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
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```
Splitting t1 into {0} and {1}
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t2 into {8, 4, 5} and {9, 10, 11}
Splitting t2 into {8} and {4, 5}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 1
task, t2 4
task, t3 2
task, t4 1
task, t5 3
task, t6 1
constraint, t1 after t5
constraint, t2 before t5
constraint, t2 same-day t6
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t3 same-day t6
constraint, t4 before t5
domain, t1 wed
domain, t2 thu
domain, t4 fri
domain, t1 ends-by fri 9am 18
domain, t2 ends-by tue 11am 10
domain, t3 ends-by thu 10am 7
domain, t5 ends-by wed 9am 9
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 3
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t2
constraint, t1 after t3
constraint, t1 before t5
constraint, t1 before t6
constraint, t2 after t3
constraint, t3 starts-at t4
domain, t2 tue
domain, t4 wed
domain, t1 ends-by wed 2pm 14
domain, t2 ends-by mon 9am 20
domain, t3 ends-by tue 11am 6
domain, t4 ends-by mon 3pm 7
domain, t5 ends-by mon 4pm 12
domain, t6 ends-by wed 1pm 6
No (more) solutions. Total of 1 paths expanded.
task, t1 2
```

```
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 3
constraint, t1 after t3
constraint, t5 before t6
domain, t3 tue
domain, t5 ends-by tue 11am 16
domain, t6 ends-by fri 12pm 16
Splitting t1 into {11, 12, 13, 16, 17, 18, 19, 20, 21, 24} and {32, 33, 34, 35, 3
6, 37, 25, 26, 27, 28, 29}
Splitting t1 into {11, 12, 13, 16, 17} and {18, 19, 20, 21, 24}
Splitting t1 into {11, 12} and {16, 17, 13}
Splitting t1 into {11} and {12}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
Splitting t6 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t6 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t6 into {3, 4} and {8, 9, 10}
Splitting t6 into {3} and {4}
task, t1 1
task, t2 3
task, t3 1
task, t4 2
task, t5 2
task, t6 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t1 same-day t5
constraint, t3 before t5
constraint, t5 before t6
domain, t3 fri
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by wed 4pm 11
domain, t5 ends-by tue 2pm 14
domain, t6 ends-by tue 10am 16
Splitting t1 into {32} and {33, 34}
Splitting t2 into {33, 34} and {35, 36}
Splitting t2 into {33} and {34}
Splitting t3 into {33} and {34, 35}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
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Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {34} and {35, 36}
Splitting t6 into {36} and {37, 38}
task, t1 1
task, t2 1
task, t3 4
task, t4 2
task, t5 2
task, t6 3
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t3 same-day t6
constraint, t4 starts-at t5
constraint, t5 same-day t6
domain, t1 ends-by tue 10am 9
domain, t2 ends-by mon 1pm 9
domain, t3 ends-by wed 12pm 19
domain, t4 ends-by tue 10am 5
domain, t6 ends-by tue 3pm 16
Splitting t1 into {4, 5, 6, 36, 12, 13} and {14, 20, 21, 22, 28, 29, 30}
Splitting t1 into {4, 5, 6} and {13, 36, 12}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3, 4}
Splitting t6 into {0} and {1}
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 1
task, t6 1
constraint, t2 starts-at t4
constraint, t3 same-day t4
constraint, t4 same-day t5
domain, t1 wed
domain, t5 wed
domain, t1 ends-by wed 4pm 5
domain, t4 ends-by tue 3pm 10
domain, t5 ends-by tue 2pm 15
domain, t6 ends-by thu 10am 14
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
Splitting t5 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t5 into {16} and {17, 18}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t6 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 4
```

```
task, t2 4
task, t3 1
task, t4 1
task, t5 3
task, t6 1
constraint, t1 before t2
constraint, t1 after t3
constraint, t1 before t6
constraint, t4 before t6
constraint, t5 before t6
domain, t1 ends-by fri 11am 9
domain, t2 ends-by thu 10am 11
domain, t3 ends-by fri 9am 8
domain, t4 ends-by mon 12pm 6
domain, t5 ends-by tue 4pm 8
Splitting t1 into {1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {32, 33} and {34, 35}
Splitting t2 into {32} and {33}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {32, 33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {5, 6, 8, 9, 10, 11, 12} and {13, 14, 16, 17, 18, 19, 20, 21}
Splitting t6 into {8, 5, 6} and {9, 10, 11, 12}
Splitting t6 into {8} and {5, 6}
task, t1 1
task, t2 1
task, t3 3
task, t4 3
task, t5 1
task, t6 2
constraint, t1 before t5
constraint, t2 after t3
domain, t4 thu
domain, t1 ends-by thu 9am 7
domain, t2 ends-by thu 4pm 15
domain, t3 ends-by fri 4pm 11
domain, t4 ends-by thu 9am 10
domain, t5 ends-by fri 10am 17
domain, t6 ends-by mon 12pm 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
```

Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {3, 4} and {5, 6}
Splitting t2 into {3} and {4}
Splitting t4 into {24, 25} and {26, 27, 28}
Splitting t4 into {24} and {25}
Splitting t5 into {1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and {32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {1, 2, 3, 4, 5, 6, 8, 9} and {10, 11, 12, 13, 14, 16, 17, 18, 19}
Splitting t5 into {1, 2, 3, 4} and {8, 9, 5, 6}
Splitting t5 into {1, 2} and {3, 4}
Splitting t5 into {1} and {2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 1
task, t4 4
task, t5 1
task, t6 3
constraint, t1 before t4
constraint, t3 before t4
constraint, t3 after t6
constraint, t4 after t5
constraint, t5 after t6
domain, t1 thu
domain, t6 wed
domain, t1 ends-by wed 11am 10
domain, t2 ends-by thu 9am 16
domain, t3 ends-by tue 3pm 6
domain, t5 ends-by fri 10am 15
domain, t6 ends-by tue 4pm 16
Splitting t1 into {24, 25} and {26, 27}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {32, 33, 34, 19, 20, 21, 22} and {24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {32, 33, 34} and {19, 20, 21, 22}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {33} and {34, 35}
Splitting t5 into {32, 19, 20, 21, 22, 24} and {25, 26, 27, 28, 29, 30}
Splitting t5 into {32, 19, 20} and {24, 21, 22}
Splitting t5 into {32} and {19, 20}
Splitting t6 into {16, 17} and {18, 19, 20}
Splitting t6 into {16} and {17}
task, t1 4
task, t2 3
task, t3 4
task, t4 4

```
task, t5 4
task, t6 2
constraint, t1 same-day t2
constraint, t1 starts-at t3
constraint, t3 same-day t4
constraint, t3 before t5
constraint, t5 same-day t6
domain, t1 wed
domain, t5 wed
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by mon 2pm 17
domain, t4 ends-by tue 9am 7
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 4
task, t3 4
task, t4 4
task, t5 3
task, t6 2
constraint, t1 after t6
constraint, t2 same-day t6
constraint, t3 same-day t5
constraint, t4 starts-at t6
domain, t1 fri
domain, t3 fri
domain, t1 ends-by tue 1pm 18
domain, t2 ends-by wed 9am 12
domain, t3 ends-by thu 9am 19
domain, t5 ends-by fri 4pm 7
domain, t6 ends-by tue 3pm 8
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {32, 33} and {34, 35}
Splitting t3 into {32} and {33}
Splitting t4 into {2} and {3}
Splitting t5 into {32, 33} and {34, 35, 36}
Splitting t5 into {32} and {33}
task, t1 4
task, t2 3
task, t3 3
task, t4 3
task, t5 3
task, t6 1
constraint, t1 same-day t3
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 same-day t5
constraint, t4 after t6
domain, t1 ends-by mon 4pm 5
domain, t3 ends-by fri 11am 5
domain, t4 ends-by wed 12pm 12
domain, t6 ends-by mon 9am 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
```

```
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t4 into {1, 2} and {3, 4}
Splitting t4 into {1} and {2}
task, t1 3
task, t2 3
task, t3 4
task, t4 1
task, t5 3
task, t6 2
constraint, t1 same-day t6
constraint, t2 after t5
constraint, t2 before t6
domain, t1 ends-by fri 11am 12
domain, t2 ends-by fri 1pm 13
domain, t3 ends-by wed 4pm 20
domain, t4 ends-by tue 3pm 9
domain, t6 ends-by wed 1pm 5
Splitting t1 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t1 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t6 into {8, 9, 10} and {11, 12, 13}
Splitting t6 into {8} and {9, 10}
task, t1 2
task, t2 3
task, t3 2
task, t4 1
task, t5 1
task, t6 3
constraint, t1 before t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t3 same-day t6
domain, t1 wed
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by thu 12pm 18
domain, t3 ends-by mon 4pm 13
domain, t4 ends-by tue 4pm 11
domain, t5 ends-by tue 11am 20
```

domain, t6 ends-by tue 11am 13
Splitting t1 into {16, 17, 18} and {19, 20, 21}
Splitting t1 into {16} and {17, 18}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34, 35, 36, 37, 19} and {20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {32, 33, 34} and {19, 35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t4 into {32} and {33, 34}
Splitting t5 into {18, 19, 20, 21, 22, 24} and {25, 26, 27, 28, 29, 30}
Splitting t5 into {18, 19, 20} and {24, 21, 22}
Splitting t5 into {18} and {19, 20}
Splitting t6 into {32, 33} and {34, 35, 36}
Splitting t6 into {32} and {33}
task, t1 2
task, t2 2
task, t3 1
task, t4 2
task, t5 3
task, t6 4
constraint, t1 before t5
constraint, t2 before t5
constraint, t2 after t6
constraint, t4 after t6
domain, t4 tue
domain, t1 ends-by wed 2pm 6
domain, t2 ends-by mon 1pm 19
domain, t3 ends-by wed 10am 6
domain, t4 ends-by mon 4pm 6
domain, t5 ends-by mon 11am 16
domain, t6 ends-by tue 4pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18}
Splitting t2 into {4, 5} and {8, 9, 10}
Splitting t2 into {4} and {5}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {8, 9, 10} and {11, 12, 13}
Splitting t4 into {8} and {9, 10}
Splitting t5 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36, 24, 25, 26, 27, 28}
Splitting t5 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t5 into {8, 9} and {10, 11, 12}
Splitting t5 into {8} and {9}

```
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 4
task, t6 2
constraint, t1 before t4
constraint, t5 same-day t6
domain, t4 thu
domain, t6 mon
domain, t1 ends-by fri 1pm 9
domain, t3 ends-by thu 1pm 11
domain, t4 ends-by tue 12pm 14
domain, t5 ends-by thu 3pm 12
domain, t6 ends-by fri 9am 19
Splitting t1 into {0, 1, 2, 3, 8, 9} and {10, 11, 16, 17, 18, 19}
Splitting t1 into {0, 1, 2} and {8, 9, 3}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {24, 25} and {26, 27}
Splitting t4 into {24} and {25}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2} and {3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 2
task, t6 4
constraint, t1 before t6
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 same-day t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t3 thu
domain, t1 ends-by thu 1pm 5
domain, t2 ends-by fri 1pm 11
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by mon 4pm 10
domain, t6 ends-by mon 10am 8
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 4
task, t6 2
constraint, t1 same-day t5
```

```
constraint, t3 same-day t6
constraint, t4 before t5
domain, t1 ends-by wed 3pm 9
domain, t2 ends-by fri 9am 13
domain, t3 ends-by thu 12pm 5
domain, t4 ends-by fri 3pm 13
domain, t5 ends-by tue 11am 9
domain, t6 ends-by thu 9am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {1} and {2, 3}
Splitting t6 into {0, 1, 2} and {3, 4, 5}
Splitting t6 into {0} and {1, 2}
Task 6: with cost=12.97, without cost=13.20, improvement=1.8%

Overall Average Improvement: 1.4%
```


Comparison of CSP solver with & without cost function
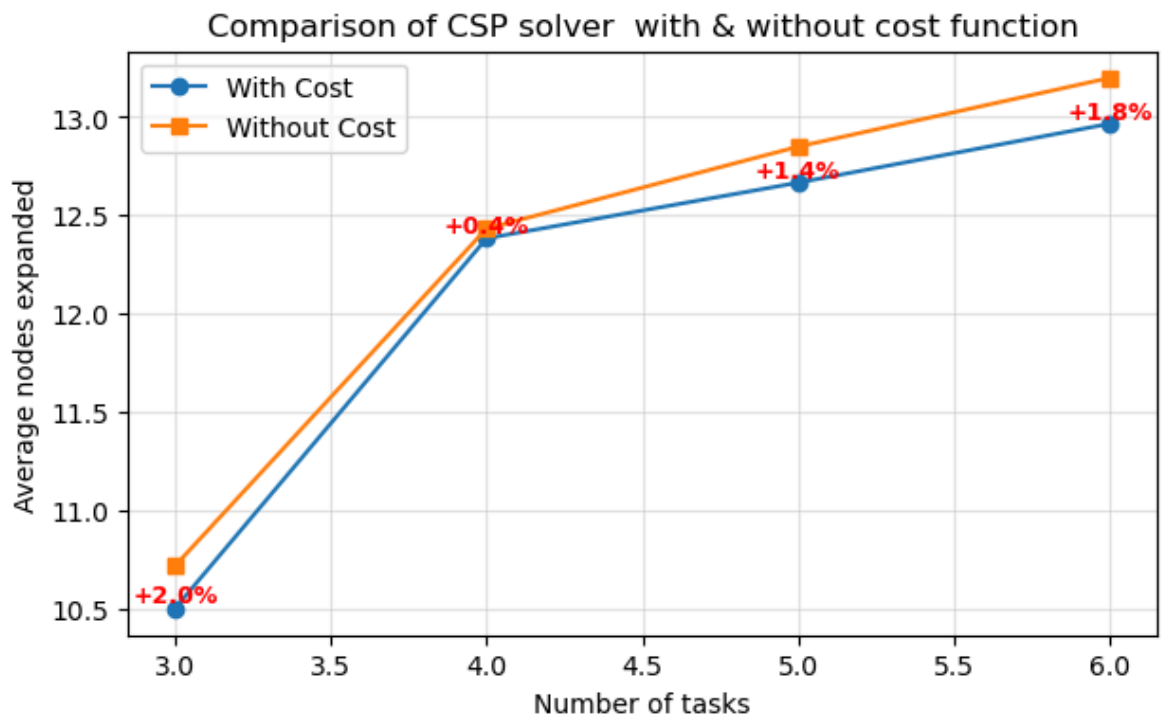
Answers for Question 3

1. For this experiment, the results show that the CSP solver without using the cost function performed better than the solver that used the cost function across all tested values of n (n = 3, 4, 5, 6).
2. The performance improvement is clearly shown in the graph, 2% (n=3), 0.4% (n=4), 1.4% (n=5), and 1.8% (n=6).Overall Average Improvement: 1.4%(n=3,4,5,6)

Question 4 (5 marks)

Compare the Depth-First Search (DFS) solver to the Depth-First Search solver using forward checking with Minimum Remaining Values heuristic (DFS-MRV). For this question, ignore the costs associated with the CSP problems.

- What is the worst case time and space complexity of each algorithm (give a general form in terms of fuzzy scheduling problem sizes)? (1 mark)
- What are the properties of the search algorithms (completeness, optimality)? (1 mark)
- Give an example of a problem that is *easier* for the DFS-MRV solver than it is for the DFS solver, and explain why (1 mark)
- Empirically compare the quality of the first solution found by DFS and DFS-MRV compared to the optimal solution (1 mark)
- Empirically compare DFS-MRV with DFS in terms of the number of nodes expanded (1 mark)

For the empirical evaluations, run the two algorithms on a variety of problems of size n for varying n . Note that the domain splitting CSP solver with costs should always find an optimal solution.

In [95]:
```python
import math, statistics
import matplotlib.pyplot as plt

# The domain splitting CSP solver with costs should find an optimal solution
def optimal_cost(spec):
    csp = create_CSP_from_spec(spec)
    solver = GreedySearcher(Search_with_AC_from_Cost_CSP(csp))
    path = solver.search()
    return math.inf if path is None else path.end().cost

# Return the first solution and the number of expanded nodes
def first_solution_and_nodes(spec, use_mrv):
    global num_expanded
    num_expanded = 0
    csp = create_CSP_from_spec(spec)
    sol = mrv_dfs_solve1(csp) if use_mrv else dfs_solve1(csp)
    return sol, num_expanded

# Calculation of soft costs
def soft_cost(spec, assignment):
    if assignment is None:
        return math.inf
    csp = create_CSP_from_spec(spec)
    total = 0
    for t, start in assignment.items():
```

```python
            fs = csp.cost_functions.get(t, [])
            f  = fs[0] if fs else None
            if f is None or getattr(f, "__name__", "") != "ends_by":
                continue
            total += f(start, csp.soft_day_time[t], csp.durations[t], int(csp.soft_c
    return total
# Use the same data for both algorithms to ensure fairness
def run_q4_test(n_values=(3,4,5,6), trials=30, seed_base=600):
    rows = []
    for n in n_values:
        specs = [generate_problem(n, seed=seed_base + 1000*n + k) for k in range
        for sp in specs:
            # DFS
            sol_dfs, nodes_dfs = first_solution_and_nodes(sp, use_mrv=False)
            cost_dfs = soft_cost(sp, sol_dfs)
            # MRV-DFS
            sol_mrv, nodes_mrv = first_solution_and_nodes(sp, use_mrv=True)
            cost_mrv = soft_cost(sp, sol_mrv)
            # optimal
            cost_opt = optimal_cost(sp)

            rows.append(dict(n=n,
                            nodes_dfs=nodes_dfs, nodes_mrv=nodes_mrv,
                            cost_dfs=cost_dfs, cost_mrv=cost_mrv, cost_opt=cost

    def avg(xs):# Discard meaningless values to prevent errors
        xs = [x for x in xs if x is not None and x != math.inf]
        return statistics.mean(xs) if xs else float("nan")
# Output result
    for n in n_values:
        sub = [r for r in rows if r["n"] == n]
        m_ndfs = avg([r["nodes_dfs"] for r in sub])
        m_nmrv = avg([r["nodes_mrv"] for r in sub])
        m_cdfs = avg([r["cost_dfs"]  for r in sub])
        m_cmrv = avg([r["cost_mrv"]  for r in sub])
        m_copt = avg([r["cost_opt"]  for r in sub])

        print(f"\n[n={n}]  nodes  DFS={m_ndfs:.1f}, MRV={m_nmrv:.1f}"
              f"  |  first-cost  DFS={m_cdfs:.1f}, MRV={m_cmrv:.1f}, optimal={m_

    # The average number of expanded nodes in the comparison of the two algorith
    xs = list(n_values)
    y_dfs = [avg([r["nodes_dfs"] for r in rows if r["n"] == n]) for n in xs]
    y_mrv = [avg([r["nodes_mrv"] for r in rows if r["n"] == n]) for n in xs]

    plt.figure(figsize=(7,4))
    plt.plot(xs, y_dfs, marker='o', label='DFS')
    plt.plot(xs, y_mrv, marker='s', label='DFS-MRV')
    plt.xlabel('Number of tasks (n)'); plt.ylabel('Average nodes expanded')
    plt.title('DFS vs DFS-MRV — average nodes expanded')
    plt.grid(True, alpha=0.35); plt.legend(); plt.show()

    # The quality of the first solution found by DFS and DFS-MRV compared to the
    c_dfs = [avg([r["cost_dfs"] for r in rows if r["n"] == n]) for n in xs]
    c_mrv = [avg([r["cost_mrv"] for r in rows if r["n"] == n]) for n in xs]
    c_opt = [avg([r["cost_opt"] for r in rows if r["n"] == n]) for n in xs]

    plt.figure(figsize=(7,4))
    plt.plot(xs, c_dfs, marker='o', label='DFS first-solution')
    plt.plot(xs, c_mrv, marker='s', label='MRV first-solution ')
```

```python
    plt.plot(xs, c_opt, marker='p', label='Optimal cost')
    plt.xlabel('Number of tasks (n)'); plt.ylabel('Cost')
    plt.title('First-solution of DFS & DFS-MRV vs optimal')
    plt.grid(True, alpha=0.35); plt.legend(); plt.show()

# Test
run_q4_test(n_values=(3,4,5,6), trials=30, seed_base=600)
```

```
task, t1 2
task, t2 2
task, t3 2
domain, t3 mon
domain, t2 ends-by tue 1pm 20
domain, t3 ends-by mon 9am 8
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 2
domain, t3 mon
domain, t2 ends-by tue 1pm 20
domain, t3 ends-by mon 9am 8
task, t1 2
task, t2 2
task, t3 2
domain, t3 mon
domain, t2 ends-by tue 1pm 20
domain, t3 ends-by mon 9am 8
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 2
domain, t3 mon
domain, t2 ends-by tue 1pm 20
domain, t3 ends-by mon 9am 8
task, t1 2
task, t2 2
task, t3 2
domain, t3 mon
domain, t2 ends-by tue 1pm 20
domain, t3 ends-by mon 9am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 fri
domain, t1 ends-by mon 10am 10
domain, t2 ends-by tue 12pm 7
domain, t3 ends-by thu 2pm 19
Nodes expanded to reach solution: 1039
task, t1 1
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 fri
```

```
domain, t1 ends-by mon 10am 10
domain, t2 ends-by tue 12pm 7
domain, t3 ends-by thu 2pm 19
task, t1 1
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 fri
domain, t1 ends-by mon 10am 10
domain, t2 ends-by tue 12pm 7
domain, t3 ends-by thu 2pm 19
Nodes expanded to reach solution: 3
task, t1 1
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 fri
domain, t1 ends-by mon 10am 10
domain, t2 ends-by tue 12pm 7
domain, t3 ends-by thu 2pm 19
task, t1 1
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 fri
domain, t1 ends-by mon 10am 10
domain, t2 ends-by tue 12pm 7
domain, t3 ends-by thu 2pm 19
Splitting t1 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
task, t1 2
task, t2 4
task, t3 2
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 10am 19
domain, t3 ends-by tue 12pm 9
Nodes expanded to reach solution: 3
task, t1 2
task, t2 4
task, t3 2
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 10am 19
domain, t3 ends-by tue 12pm 9
task, t1 2
task, t2 4
task, t3 2
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 10am 19
domain, t3 ends-by tue 12pm 9
Nodes expanded to reach solution: 3
task, t1 2
task, t2 4
task, t3 2
```

```
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 10am 19
domain, t3 ends-by tue 12pm 9
task, t1 2
task, t2 4
task, t3 2
domain, t1 ends-by mon 4pm 10
domain, t2 ends-by mon 10am 19
domain, t3 ends-by tue 12pm 9
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 2
task, t3 3
domain, t1 ends-by wed 2pm 14
domain, t3 ends-by tue 4pm 18
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 3
domain, t1 ends-by wed 2pm 14
domain, t3 ends-by tue 4pm 18
task, t1 2
task, t2 2
task, t3 3
domain, t1 ends-by wed 2pm 14
domain, t3 ends-by tue 4pm 18
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 3
domain, t1 ends-by wed 2pm 14
domain, t3 ends-by tue 4pm 18
task, t1 2
task, t2 2
task, t3 3
domain, t1 ends-by wed 2pm 14
domain, t3 ends-by tue 4pm 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
```

Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 1
domain, t1 wed
domain, t2 thu
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 9am 5
Nodes expanded to reach solution: 3
task, t1 4
task, t2 1
task, t3 1
domain, t1 wed
domain, t2 thu
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 9am 5
task, t1 4
task, t2 1
task, t3 1
domain, t1 wed
domain, t2 thu
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 9am 5
Nodes expanded to reach solution: 3
task, t1 4
task, t2 1
task, t3 1
domain, t1 wed
domain, t2 thu
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 9am 5
task, t1 4
task, t2 1
task, t3 1
domain, t1 wed
domain, t2 thu
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 9am 5
Splitting t1 into {16, 17} and {18, 19}
Splitting t1 into {16} and {17}
Splitting t2 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 3
task, t3 3
constraint, t2 after t3
domain, t2 fri
domain, t1 ends-by thu 11am 12

```
domain, t2 ends-by mon 1pm 11
domain, t3 ends-by wed 11am 15
Nodes expanded to reach solution: 3
task, t1 2
task, t2 3
task, t3 3
constraint, t2 after t3
domain, t2 fri
domain, t1 ends-by thu 11am 12
domain, t2 ends-by mon 1pm 11
domain, t3 ends-by wed 11am 15
task, t1 2
task, t2 3
task, t3 3
constraint, t2 after t3
domain, t2 fri
domain, t1 ends-by thu 11am 12
domain, t2 ends-by mon 1pm 11
domain, t3 ends-by wed 11am 15
Nodes expanded to reach solution: 3
task, t1 2
task, t2 3
task, t3 3
constraint, t2 after t3
domain, t2 fri
domain, t1 ends-by thu 11am 12
domain, t2 ends-by mon 1pm 11
domain, t3 ends-by wed 11am 15
task, t1 2
task, t2 3
task, t3 3
constraint, t2 after t3
domain, t2 fri
domain, t1 ends-by thu 11am 12
domain, t2 ends-by mon 1pm 11
domain, t3 ends-by wed 11am 15
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33} and {34, 35, 36}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {16, 17, 18, 19, 20, 24,
25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
task, t1 1
task, t2 3
task, t3 2
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by thu 9am 7
domain, t3 ends-by wed 4pm 15
Nodes expanded to reach solution: 81
task, t1 1
task, t2 3
task, t3 2
```

```
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by thu 9am 7
domain, t3 ends-by wed 4pm 15
task, t1 1
task, t2 3
task, t3 2
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by thu 9am 7
domain, t3 ends-by wed 4pm 15
Nodes expanded to reach solution: 3
task, t1 1
task, t2 3
task, t3 2
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by thu 9am 7
domain, t3 ends-by wed 4pm 15
task, t1 1
task, t2 3
task, t3 2
constraint, t1 after t2
constraint, t1 after t3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by thu 9am 7
domain, t3 ends-by wed 4pm 15
Splitting t1 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t1 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t1 into {3, 4} and {5, 6}
Splitting t1 into {3} and {4}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 2
task, t3 2
domain, t1 ends-by mon 12pm 8
domain, t2 ends-by wed 4pm 10
domain, t3 ends-by tue 11am 5
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 2
domain, t1 ends-by mon 12pm 8
domain, t2 ends-by wed 4pm 10
domain, t3 ends-by tue 11am 5
task, t1 2
task, t2 2
task, t3 2
domain, t1 ends-by mon 12pm 8
domain, t2 ends-by wed 4pm 10
domain, t3 ends-by tue 11am 5
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 2
```

```
domain, t1 ends-by mon 12pm 8
domain, t2 ends-by wed 4pm 10
domain, t3 ends-by tue 11am 5
task, t1 2
task, t2 2
task, t3 2
domain, t1 ends-by mon 12pm 8
domain, t2 ends-by wed 4pm 10
domain, t3 ends-by tue 11am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 4
task, t2 2
task, t3 3
constraint, t1 starts-at t2
domain, t1 ends-by wed 12pm 18
domain, t2 ends-by thu 10am 19
Nodes expanded to reach solution: 65
task, t1 4
task, t2 2
task, t3 3
constraint, t1 starts-at t2
domain, t1 ends-by wed 12pm 18
domain, t2 ends-by thu 10am 19
task, t1 4
task, t2 2
task, t3 3
constraint, t1 starts-at t2
domain, t1 ends-by wed 12pm 18
domain, t2 ends-by thu 10am 19
Nodes expanded to reach solution: 5
task, t1 4
task, t2 2
task, t3 3
constraint, t1 starts-at t2
domain, t1 ends-by wed 12pm 18
domain, t2 ends-by thu 10am 19
task, t1 4
task, t2 2
task, t3 3
constraint, t1 starts-at t2
domain, t1 ends-by wed 12pm 18
domain, t2 ends-by thu 10am 19
Splitting t1 into {2, 35, 3, 34, 10} and {11, 18, 19, 26, 27}
Splitting t1 into {2, 35} and {10, 34, 3}
Splitting t1 into {2} and {35}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
```

36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 4
constraint, t2 before t3
domain, t1 thu
domain, t2 ends-by fri 11am 17
domain, t3 ends-by mon 12pm 8
Nodes expanded to reach solution: 5
task, t1 1
task, t2 2
task, t3 4
constraint, t2 before t3
domain, t1 thu
domain, t2 ends-by fri 11am 17
domain, t3 ends-by mon 12pm 8
task, t1 1
task, t2 2
task, t3 4
constraint, t2 before t3
domain, t1 thu
domain, t2 ends-by fri 11am 17
domain, t3 ends-by mon 12pm 8
Nodes expanded to reach solution: 5
task, t1 1
task, t2 2
task, t3 4
constraint, t2 before t3
domain, t1 thu
domain, t2 ends-by fri 11am 17
domain, t3 ends-by mon 12pm 8
task, t1 1
task, t2 2
task, t3 4
constraint, t2 before t3
domain, t1 thu
domain, t2 ends-by fri 11am 17
domain, t3 ends-by mon 12pm 8
Splitting t1 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 1
8, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
Splitting t3 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t3 into {32, 33} and {2, 3}
Splitting t3 into {2} and {3}
task, t1 2
task, t2 2
task, t3 2
domain, t1 fri
domain, t1 ends-by tue 9am 15
domain, t2 ends-by wed 4pm 7
Nodes expanded to reach solution: 3

```
task, t1 2
task, t2 2
task, t3 2
domain, t1 fri
domain, t1 ends-by tue 9am 15
domain, t2 ends-by wed 4pm 7
task, t1 2
task, t2 2
task, t3 2
domain, t1 fri
domain, t1 ends-by tue 9am 15
domain, t2 ends-by wed 4pm 7
Nodes expanded to reach solution: 3
task, t1 2
task, t2 2
task, t3 2
domain, t1 fri
domain, t1 ends-by tue 9am 15
domain, t2 ends-by wed 4pm 7
task, t1 2
task, t2 2
task, t3 2
domain, t1 fri
domain, t1 ends-by tue 9am 15
domain, t2 ends-by wed 4pm 7
Splitting t1 into {32, 33, 34} and {35, 36, 37}
Splitting t1 into {32} and {33, 34}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 4
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 10am 13
domain, t2 ends-by fri 10am 17
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 10am 13
domain, t2 ends-by fri 10am 17
task, t1 1
task, t2 4
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 10am 13
domain, t2 ends-by fri 10am 17
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 4
```

constraint, t1 before t3
domain, t1 ends-by tue 10am 13
domain, t2 ends-by fri 10am 17
task, t1 1
task, t2 4
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 10am 13
domain, t2 ends-by fri 10am 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t3 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t3 into {8, 1} and {2, 3}
Splitting t3 into {8} and {1}
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 14
domain, t2 ends-by mon 10am 11
Nodes expanded to reach solution: 5
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 14
domain, t2 ends-by mon 10am 11
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 14
domain, t2 ends-by mon 10am 11
Nodes expanded to reach solution: 3
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 14
domain, t2 ends-by mon 10am 11
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 14
domain, t2 ends-by mon 10am 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}

```
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t3 into {2, 3} and {4, 5}
Splitting t3 into {2} and {3}
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 2pm 11
domain, t2 ends-by tue 4pm 13
domain, t3 ends-by thu 4pm 17
Nodes expanded to reach solution: 5
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 2pm 11
domain, t2 ends-by tue 4pm 13
domain, t3 ends-by thu 4pm 17
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 2pm 11
domain, t2 ends-by tue 4pm 13
domain, t3 ends-by thu 4pm 17
Nodes expanded to reach solution: 5
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 2pm 11
domain, t2 ends-by tue 4pm 13
domain, t3 ends-by thu 4pm 17
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
domain, t1 ends-by tue 2pm 11
domain, t2 ends-by tue 4pm 13
domain, t3 ends-by thu 4pm 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 1
8, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
```

```
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
Splitting t3 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t3 into {32, 33} and {2, 3}
Splitting t3 into {2} and {3}
task, t1 3
task, t2 1
task, t3 4
constraint, t1 starts-at t2
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 ends-by mon 3pm 16
domain, t3 ends-by wed 11am 20
Nodes expanded to reach solution: 50
task, t1 3
task, t2 1
task, t3 4
constraint, t1 starts-at t2
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 ends-by mon 3pm 16
domain, t3 ends-by wed 11am 20
task, t1 3
task, t2 1
task, t3 4
constraint, t1 starts-at t2
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 ends-by mon 3pm 16
domain, t3 ends-by wed 11am 20
Nodes expanded to reach solution: 4
task, t1 3
task, t2 1
task, t3 4
constraint, t1 starts-at t2
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 ends-by mon 3pm 16
domain, t3 ends-by wed 11am 20
task, t1 3
task, t2 1
task, t3 4
constraint, t1 starts-at t2
constraint, t1 same-day t3
constraint, t2 same-day t3
domain, t1 tue
domain, t2 ends-by mon 3pm 16
domain, t3 ends-by wed 11am 20
Splitting t1 into {9, 10} and {11, 12}
Splitting t1 into {9} and {10}
Splitting t3 into {8, 9} and {10, 11}
Splitting t3 into {8} and {9}
task, t1 2
task, t2 3
task, t3 3
```

```
constraint, t2 before t3
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by tue 1pm 5
Nodes expanded to reach solution: 6
task, t1 2
task, t2 3
task, t3 3
constraint, t2 before t3
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by tue 1pm 5
task, t1 2
task, t2 3
task, t3 3
constraint, t2 before t3
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by tue 1pm 5
Nodes expanded to reach solution: 3
task, t1 2
task, t2 3
task, t3 3
constraint, t2 before t3
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by tue 1pm 5
task, t1 2
task, t2 3
task, t3 3
constraint, t2 before t3
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by tue 1pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t2 into {0, 1} and {2, 3, 4}
Splitting t2 into {0} and {1}
Splitting t3 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t3 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t3 into {3, 4} and {8, 9, 10}
Splitting t3 into {3} and {4}
task, t1 2
task, t2 4
task, t3 4
constraint, t1 starts-at t2
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by fri 10am 13
Nodes expanded to reach solution: 87
task, t1 2
task, t2 4
task, t3 4
constraint, t1 starts-at t2
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by fri 10am 13
task, t1 2
```

```
task, t2 4
task, t3 4
constraint, t1 starts-at t2
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by fri 10am 13
Nodes expanded to reach solution: 3
task, t1 2
task, t2 4
task, t3 4
constraint, t1 starts-at t2
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by fri 10am 13
task, t1 2
task, t2 4
task, t3 4
constraint, t1 starts-at t2
domain, t1 ends-by tue 12pm 19
domain, t2 ends-by mon 4pm 20
domain, t3 ends-by fri 10am 13
Splitting t1 into {4, 37, 5, 36, 12} and {13, 20, 21, 28, 29}
Splitting t1 into {4, 37} and {12, 36, 5}
Splitting t1 into {4} and {37}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t2 before t3
domain, t1 ends-by fri 12pm 14
domain, t2 ends-by thu 10am 13
domain, t3 ends-by thu 10am 8
Nodes expanded to reach solution: 91
task, t1 2
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t2 before t3
domain, t1 ends-by fri 12pm 14
domain, t2 ends-by thu 10am 13
domain, t3 ends-by thu 10am 8
task, t1 2
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t2 before t3
domain, t1 ends-by fri 12pm 14
domain, t2 ends-by thu 10am 13
domain, t3 ends-by thu 10am 8
Nodes expanded to reach solution: 3
task, t1 2
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t2 before t3
```

```
domain, t1 ends-by fri 12pm 14
domain, t2 ends-by thu 10am 13
domain, t3 ends-by thu 10am 8
task, t1 2
task, t2 4
task, t3 1
constraint, t1 after t2
constraint, t2 before t3
domain, t1 ends-by fri 12pm 14
domain, t2 ends-by thu 10am 13
domain, t3 ends-by thu 10am 8
Splitting t1 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t1 into {8, 4, 5} and {9, 10, 11}
Splitting t1 into {8} and {4, 5}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t3 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t3 into {4} and {5, 6}
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by wed 11am 9
domain, t2 ends-by tue 4pm 19
domain, t3 ends-by wed 9am 6
Nodes expanded to reach solution: 3
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by wed 11am 9
domain, t2 ends-by tue 4pm 19
domain, t3 ends-by wed 9am 6
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by wed 11am 9
domain, t2 ends-by tue 4pm 19
domain, t3 ends-by wed 9am 6
Nodes expanded to reach solution: 3
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by wed 11am 9
domain, t2 ends-by tue 4pm 19
domain, t3 ends-by wed 9am 6
task, t1 1
task, t2 2
task, t3 2
domain, t1 ends-by wed 11am 9
domain, t2 ends-by tue 4pm 19
domain, t3 ends-by wed 9am 6
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
```

```
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 1
constraint, t1 same-day t2
domain, t1 ends-by thu 1pm 13
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by thu 11am 8
Nodes expanded to reach solution: 3
task, t1 2
task, t2 4
task, t3 1
constraint, t1 same-day t2
domain, t1 ends-by thu 1pm 13
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by thu 11am 8
task, t1 2
task, t2 4
task, t3 1
constraint, t1 same-day t2
domain, t1 ends-by thu 1pm 13
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by thu 11am 8
Nodes expanded to reach solution: 3
task, t1 2
task, t2 4
task, t3 1
constraint, t1 same-day t2
domain, t1 ends-by thu 1pm 13
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by thu 11am 8
task, t1 2
task, t2 4
task, t3 1
constraint, t1 same-day t2
domain, t1 ends-by thu 1pm 13
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by thu 11am 8
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
```

```
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 4
task, t2 4
task, t3 3
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 4pm 13
domain, t2 ends-by fri 11am 7
domain, t3 ends-by wed 2pm 20
Nodes expanded to reach solution: 3
task, t1 4
task, t2 4
task, t3 3
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 4pm 13
domain, t2 ends-by fri 11am 7
domain, t3 ends-by wed 2pm 20
task, t1 4
task, t2 4
task, t3 3
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 4pm 13
domain, t2 ends-by fri 11am 7
domain, t3 ends-by wed 2pm 20
Nodes expanded to reach solution: 3
task, t1 4
task, t2 4
task, t3 3
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 4pm 13
domain, t2 ends-by fri 11am 7
domain, t3 ends-by wed 2pm 20
task, t1 4
task, t2 4
task, t3 3
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 4pm 13
domain, t2 ends-by fri 11am 7
domain, t3 ends-by wed 2pm 20
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 1
task, t3 3
domain, t3 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 4pm 5
```

```
domain, t3 ends-by fri 12pm 19
Nodes expanded to reach solution: 3
task, t1 3
task, t2 1
task, t3 3
domain, t3 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by fri 12pm 19
task, t1 3
task, t2 1
task, t3 3
domain, t3 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by fri 12pm 19
Nodes expanded to reach solution: 3
task, t1 3
task, t2 1
task, t3 3
domain, t3 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by fri 12pm 19
task, t1 3
task, t2 1
task, t3 3
domain, t3 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by fri 12pm 19
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
constraint, t2 after t3
domain, t1 ends-by fri 10am 19
domain, t3 ends-by mon 10am 5
Nodes expanded to reach solution: 129
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
constraint, t2 after t3
domain, t1 ends-by fri 10am 19
domain, t3 ends-by mon 10am 5
```

```
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
constraint, t2 after t3
domain, t1 ends-by fri 10am 19
domain, t3 ends-by mon 10am 5
Nodes expanded to reach solution: 3
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
constraint, t2 after t3
domain, t1 ends-by fri 10am 19
domain, t3 ends-by mon 10am 5
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
constraint, t2 after t3
domain, t1 ends-by fri 10am 19
domain, t3 ends-by mon 10am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t2 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t2 into {4} and {5, 6}
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by thu 10am 19
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by tue 12pm 18
Nodes expanded to reach solution: 7
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by thu 10am 19
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by tue 12pm 18
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by thu 10am 19
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by tue 12pm 18
Nodes expanded to reach solution: 3
task, t1 2
task, t2 1
```

```
task, t3 1
constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by thu 10am 19
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by tue 12pm 18
task, t1 2
task, t2 1
task, t3 1
constraint, t1 before t2
constraint, t1 before t3
domain, t1 ends-by thu 10am 19
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by tue 12pm 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t2 into {2, 3} and {4, 5}
Splitting t2 into {2} and {3}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t3 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t3 into {2, 3} and {4, 5}
Splitting t3 into {2} and {3}
task, t1 3
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t2 ends-by wed 12pm 8
Nodes expanded to reach solution: 1264
task, t1 3
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t2 ends-by wed 12pm 8
task, t1 3
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t2 ends-by wed 12pm 8
Nodes expanded to reach solution: 4
task, t1 3
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t2 ends-by wed 12pm 8
task, t1 3
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t2 ends-by wed 12pm 8
Splitting t1 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
```

```
Splitting t1 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {1, 2, 3} and {8, 9, 4}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
task, t1 2
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by mon 2pm 16
domain, t3 ends-by mon 11am 11
Nodes expanded to reach solution: 39
task, t1 2
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by mon 2pm 16
domain, t3 ends-by mon 11am 11
task, t1 2
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by mon 2pm 16
domain, t3 ends-by mon 11am 11
Nodes expanded to reach solution: 4
task, t1 2
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by mon 2pm 16
domain, t3 ends-by mon 11am 11
task, t1 2
task, t2 4
task, t3 1
constraint, t2 starts-at t3
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by mon 2pm 16
domain, t3 ends-by mon 11am 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {1, 2, 3, 34, 33, 35, 9} and {10, 11, 17, 18, 19, 25, 26, 27}
Splitting t2 into {1, 2, 3} and {33, 34, 35, 9}
Splitting t2 into {1} and {2, 3}
task, t1 2
task, t2 3
task, t3 2
constraint, t1 before t2
constraint, t2 starts-at t3
```

```
domain, t1 tue
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 7
domain, t3 ends-by wed 9am 7
Nodes expanded to reach solution: 16
task, t1 2
task, t2 3
task, t3 2
constraint, t1 before t2
constraint, t2 starts-at t3
domain, t1 tue
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 7
domain, t3 ends-by wed 9am 7
task, t1 2
task, t2 3
task, t3 2
constraint, t1 before t2
constraint, t2 starts-at t3
domain, t1 tue
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 7
domain, t3 ends-by wed 9am 7
Nodes expanded to reach solution: 3
task, t1 2
task, t2 3
task, t3 2
constraint, t1 before t2
constraint, t2 starts-at t3
domain, t1 tue
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 7
domain, t3 ends-by wed 9am 7
task, t1 2
task, t2 3
task, t3 2
constraint, t1 before t2
constraint, t2 starts-at t3
domain, t1 tue
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 7
domain, t3 ends-by wed 9am 7
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {34, 35, 36, 10, 11, 12} and {18, 19, 20, 26, 27, 28}
Splitting t2 into {34, 35, 36} and {10, 11, 12}
Splitting t2 into {10} and {11, 12}
task, t1 3
task, t2 1
task, t3 3
domain, t1 ends-by mon 11am 10
domain, t2 ends-by fri 4pm 6
domain, t3 ends-by fri 4pm 18
Nodes expanded to reach solution: 3
task, t1 3
task, t2 1
task, t3 3
domain, t1 ends-by mon 11am 10
domain, t2 ends-by fri 4pm 6
domain, t3 ends-by fri 4pm 18
```

```
task, t1 3
task, t2 1
task, t3 3
domain, t1 ends-by mon 11am 10
domain, t2 ends-by fri 4pm 6
domain, t3 ends-by fri 4pm 18
Nodes expanded to reach solution: 3
task, t1 3
task, t2 1
task, t3 3
domain, t1 ends-by mon 11am 10
domain, t2 ends-by fri 4pm 6
domain, t3 ends-by fri 4pm 18
task, t1 3
task, t2 1
task, t3 3
domain, t1 ends-by mon 11am 10
domain, t2 ends-by fri 4pm 6
domain, t3 ends-by fri 4pm 18
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 1
constraint, t1 starts-at t2
constraint, t1 after t3
domain, t2 wed
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by wed 2pm 9
Nodes expanded to reach solution: 115
task, t1 1
task, t2 2
task, t3 1
constraint, t1 starts-at t2
constraint, t1 after t3
domain, t2 wed
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by wed 2pm 9
task, t1 1
task, t2 2
task, t3 1
constraint, t1 starts-at t2
constraint, t1 after t3
domain, t2 wed
domain, t1 ends-by wed 4pm 12
```

```
domain, t2 ends-by wed 2pm 9
Nodes expanded to reach solution: 3
task, t1 1
task, t2 2
task, t3 1
constraint, t1 starts-at t2
constraint, t1 after t3
domain, t2 wed
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by wed 2pm 9
task, t1 1
task, t2 2
task, t3 1
constraint, t1 starts-at t2
constraint, t1 after t3
domain, t2 wed
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by wed 2pm 9
Splitting t1 into {18, 19} and {20, 21, 22}
Splitting t1 into {18} and {19}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 4
task, t3 4
domain, t1 ends-by wed 3pm 9
Nodes expanded to reach solution: 3
task, t1 3
task, t2 4
task, t3 4
domain, t1 ends-by wed 3pm 9
task, t1 3
task, t2 4
task, t3 4
domain, t1 ends-by wed 3pm 9
Nodes expanded to reach solution: 3
task, t1 3
task, t2 4
task, t3 4
domain, t1 ends-by wed 3pm 9
task, t1 3
task, t2 4
task, t3 4
domain, t1 ends-by wed 3pm 9
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
```

```
Splitting t3 into {0} and {1}
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 after t3
domain, t2 ends-by tue 2pm 13
domain, t3 ends-by thu 9am 8
Nodes expanded to reach solution: 18446
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 after t3
domain, t2 ends-by tue 2pm 13
domain, t3 ends-by thu 9am 8
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 after t3
domain, t2 ends-by tue 2pm 13
domain, t3 ends-by thu 9am 8
Nodes expanded to reach solution: 6
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 after t3
domain, t2 ends-by tue 2pm 13
domain, t3 ends-by thu 9am 8
task, t1 3
task, t2 2
task, t3 1
task, t4 1
constraint, t1 after t4
constraint, t2 after t3
domain, t2 ends-by tue 2pm 13
domain, t3 ends-by thu 9am 8
Splitting t1 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t1 into {1, 2, 3} and {8, 9, 4}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33,
34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {1, 2, 3, 4, 5, 8, 9} and {10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4, 5}
Splitting t2 into {1} and {2, 3}
task, t1 2
task, t2 2
task, t3 2
task, t4 2
constraint, t1 before t4
domain, t3 thu
domain, t1 ends-by fri 2pm 18
```

```
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by mon 9am 17
domain, t4 ends-by tue 1pm 20
Nodes expanded to reach solution: 6
task, t1 2
task, t2 2
task, t3 2
task, t4 2
constraint, t1 before t4
domain, t3 thu
domain, t1 ends-by fri 2pm 18
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by mon 9am 17
domain, t4 ends-by tue 1pm 20
task, t1 2
task, t2 2
task, t3 2
task, t4 2
constraint, t1 before t4
domain, t3 thu
domain, t1 ends-by fri 2pm 18
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by mon 9am 17
domain, t4 ends-by tue 1pm 20
Nodes expanded to reach solution: 4
task, t1 2
task, t2 2
task, t3 2
task, t4 2
constraint, t1 before t4
domain, t3 thu
domain, t1 ends-by fri 2pm 18
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by mon 9am 17
domain, t4 ends-by tue 1pm 20
task, t1 2
task, t2 2
task, t3 2
task, t4 2
constraint, t1 before t4
domain, t3 thu
domain, t1 ends-by fri 2pm 18
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by mon 9am 17
domain, t4 ends-by tue 1pm 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {24, 25, 26} and {27, 28, 29}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
```

Splitting t4 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t4 into {2} and {3, 4}
task, t1 1
task, t2 2
task, t3 2
task, t4 4
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by wed 1pm 18
Nodes expanded to reach solution: 4
task, t1 1
task, t2 2
task, t3 2
task, t4 4
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by wed 1pm 18
task, t1 1
task, t2 2
task, t3 2
task, t4 4
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by wed 1pm 18
Nodes expanded to reach solution: 4
task, t1 1
task, t2 2
task, t3 2
task, t4 4
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by wed 1pm 18
task, t1 1
task, t2 2
task, t3 2
task, t4 4
domain, t2 ends-by wed 3pm 17
domain, t3 ends-by wed 1pm 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 4
task, t3 4
task, t4 3

```
constraint, t1 same-day t4
constraint, t3 same-day t4
domain, t2 ends-by thu 12pm 16
domain, t3 ends-by wed 4pm 17
domain, t4 ends-by fri 9am 7
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 4
task, t4 3
constraint, t1 same-day t4
constraint, t3 same-day t4
domain, t2 ends-by thu 12pm 16
domain, t3 ends-by wed 4pm 17
domain, t4 ends-by fri 9am 7
task, t1 1
task, t2 4
task, t3 4
task, t4 3
constraint, t1 same-day t4
constraint, t3 same-day t4
domain, t2 ends-by thu 12pm 16
domain, t3 ends-by wed 4pm 17
domain, t4 ends-by fri 9am 7
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 4
task, t4 3
constraint, t1 same-day t4
constraint, t3 same-day t4
domain, t2 ends-by thu 12pm 16
domain, t3 ends-by wed 4pm 17
domain, t4 ends-by fri 9am 7
task, t1 1
task, t2 4
task, t3 4
task, t4 3
constraint, t1 same-day t4
constraint, t3 same-day t4
domain, t2 ends-by thu 12pm 16
domain, t3 ends-by wed 4pm 17
domain, t4 ends-by fri 9am 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 1
```

```
task, t2 3
task, t3 4
task, t4 2
constraint, t1 before t2
constraint, t2 after t3
constraint, t2 before t4
constraint, t3 before t4
domain, t1 thu
domain, t2 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 4pm 17
task, t1 1
task, t2 3
task, t3 4
task, t4 2
constraint, t1 before t2
constraint, t2 after t3
constraint, t2 before t4
constraint, t3 before t4
domain, t1 thu
domain, t2 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 4pm 17
task, t1 1
task, t2 3
task, t3 4
task, t4 2
constraint, t1 before t2
constraint, t2 after t3
constraint, t2 before t4
constraint, t3 before t4
domain, t1 thu
domain, t2 mon
domain, t1 ends-by fri 9am 6
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 4pm 17
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by fri 1pm 13
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by thu 4pm 6
domain, t4 ends-by wed 2pm 16
Nodes expanded to reach solution: 4
task, t1 2
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by fri 1pm 13
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by thu 4pm 6
domain, t4 ends-by wed 2pm 16
task, t1 2
task, t2 2
task, t3 1
task, t4 3
```

```
domain, t1 ends-by fri 1pm 13
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by thu 4pm 6
domain, t4 ends-by wed 2pm 16
Nodes expanded to reach solution: 4
task, t1 2
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by fri 1pm 13
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by thu 4pm 6
domain, t4 ends-by wed 2pm 16
task, t1 2
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by fri 1pm 13
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by thu 4pm 6
domain, t4 ends-by wed 2pm 16
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 2
task, t4 1
constraint, t1 before t2
constraint, t2 before t4
domain, t1 tue
domain, t2 fri
domain, t1 ends-by mon 2pm 20
domain, t3 ends-by tue 2pm 9
domain, t4 ends-by thu 10am 12
Nodes expanded to reach solution: 33
task, t1 2
task, t2 1
task, t3 2
task, t4 1
constraint, t1 before t2
```

```
constraint, t2 before t4
domain, t1 tue
domain, t2 fri
domain, t1 ends-by mon 2pm 20
domain, t3 ends-by tue 2pm 9
domain, t4 ends-by thu 10am 12
task, t1 2
task, t2 1
task, t3 2
task, t4 1
constraint, t1 before t2
constraint, t2 before t4
domain, t1 tue
domain, t2 fri
domain, t1 ends-by mon 2pm 20
domain, t3 ends-by tue 2pm 9
domain, t4 ends-by thu 10am 12
Nodes expanded to reach solution: 4
task, t1 2
task, t2 1
task, t3 2
task, t4 1
constraint, t1 before t2
constraint, t2 before t4
domain, t1 tue
domain, t2 fri
domain, t1 ends-by mon 2pm 20
domain, t3 ends-by tue 2pm 9
domain, t4 ends-by thu 10am 12
task, t1 2
task, t2 1
task, t3 2
task, t4 1
constraint, t1 before t2
constraint, t2 before t4
domain, t1 tue
domain, t2 fri
domain, t1 ends-by mon 2pm 20
domain, t3 ends-by tue 2pm 9
domain, t4 ends-by thu 10am 12
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {32, 33, 34} and {35, 36, 37}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {33, 34, 35} and {36, 37, 38}
Splitting t4 into {33} and {34, 35}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t3
constraint, t2 same-day t4
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t3 ends-by wed 12pm 20
```

```
domain, t4 ends-by tue 11am 5
Nodes expanded to reach solution: 4
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t3
constraint, t2 same-day t4
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t3 ends-by wed 12pm 20
domain, t4 ends-by tue 11am 5
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t3
constraint, t2 same-day t4
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t3 ends-by wed 12pm 20
domain, t4 ends-by tue 11am 5
Nodes expanded to reach solution: 4
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t3
constraint, t2 same-day t4
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t3 ends-by wed 12pm 20
domain, t4 ends-by tue 11am 5
task, t1 3
task, t2 2
task, t3 4
task, t4 4
constraint, t1 before t3
constraint, t2 same-day t4
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t3 ends-by wed 12pm 20
domain, t4 ends-by tue 11am 5
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11}
Splitting t3 into {8} and {9}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 4
task, t3 3
task, t4 4
constraint, t1 after t4
constraint, t2 after t4
```

```
domain, t1 tue
domain, t1 ends-by tue 1pm 12
domain, t2 ends-by thu 12pm 18
domain, t4 ends-by tue 2pm 13
Nodes expanded to reach solution: 2108
task, t1 4
task, t2 4
task, t3 3
task, t4 4
constraint, t1 after t4
constraint, t2 after t4
domain, t1 tue
domain, t1 ends-by tue 1pm 12
domain, t2 ends-by thu 12pm 18
domain, t4 ends-by tue 2pm 13
task, t1 4
task, t2 4
task, t3 3
task, t4 4
constraint, t1 after t4
constraint, t2 after t4
domain, t1 tue
domain, t1 ends-by tue 1pm 12
domain, t2 ends-by thu 12pm 18
domain, t4 ends-by tue 2pm 13
Nodes expanded to reach solution: 4
task, t1 4
task, t2 4
task, t3 3
task, t4 4
constraint, t1 after t4
constraint, t2 after t4
domain, t1 tue
domain, t1 ends-by tue 1pm 12
domain, t2 ends-by thu 12pm 18
domain, t4 ends-by tue 2pm 13
task, t1 4
task, t2 4
task, t3 3
task, t4 4
constraint, t1 after t4
constraint, t2 after t4
domain, t1 tue
domain, t1 ends-by tue 1pm 12
domain, t2 ends-by thu 12pm 18
domain, t4 ends-by tue 2pm 13
Splitting t1 into {8, 9} and {10, 11}
Splitting t1 into {8} and {9}
Splitting t2 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t2 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
```

```
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t1 before t3
constraint, t2 before t3
constraint, t2 after t4
domain, t2 ends-by wed 3pm 7
domain, t4 ends-by fri 9am 18
Nodes expanded to reach solution: 1351
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t1 before t3
constraint, t2 before t3
constraint, t2 after t4
domain, t2 ends-by wed 3pm 7
domain, t4 ends-by fri 9am 18
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t1 before t3
constraint, t2 before t3
constraint, t2 after t4
domain, t2 ends-by wed 3pm 7
domain, t4 ends-by fri 9am 18
Nodes expanded to reach solution: 6
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t1 before t3
constraint, t2 before t3
constraint, t2 after t4
domain, t2 ends-by wed 3pm 7
domain, t4 ends-by fri 9am 18
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t1 before t3
constraint, t2 before t3
constraint, t2 after t4
domain, t2 ends-by wed 3pm 7
domain, t4 ends-by fri 9am 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {3
2, 33, 34, 35, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 18, 19, 20, 2
4, 25, 26, 27, 28}
Splitting t2 into {2, 3, 4, 8, 9} and {10, 11, 12, 16, 17}
Splitting t2 into {2, 3} and {8, 9, 4}
Splitting t2 into {2} and {3}
Splitting t3 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
```

```
Splitting t3 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
task, t1 4
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t4
domain, t2 wed
domain, t1 ends-by mon 3pm 5
domain, t4 ends-by wed 12pm 15
Nodes expanded to reach solution: 32
task, t1 4
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t4
domain, t2 wed
domain, t1 ends-by mon 3pm 5
domain, t4 ends-by wed 12pm 15
task, t1 4
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t4
domain, t2 wed
domain, t1 ends-by mon 3pm 5
domain, t4 ends-by wed 12pm 15
Nodes expanded to reach solution: 4
task, t1 4
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t4
domain, t2 wed
domain, t1 ends-by mon 3pm 5
domain, t4 ends-by wed 12pm 15
task, t1 4
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t4
domain, t2 wed
domain, t1 ends-by mon 3pm 5
domain, t4 ends-by wed 12pm 15
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
```

```
Splitting t2 into {16, 17} and {18, 19}
Splitting t2 into {16} and {17}
Splitting t3 into {16, 17, 18} and {19, 20, 21}
Splitting t3 into {16} and {17, 18}
Splitting t4 into {32, 33, 34, 35, 36, 37, 20} and {21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {32, 33, 34} and {20, 35, 36, 37}
Splitting t4 into {35, 20} and {36, 37}
Splitting t4 into {35} and {20}
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t4
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by mon 1pm 17
domain, t3 ends-by wed 10am 18
Nodes expanded to reach solution: 103048
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t4
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by mon 1pm 17
domain, t3 ends-by wed 10am 18
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t4
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by mon 1pm 17
domain, t3 ends-by wed 10am 18
Nodes expanded to reach solution: 4
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t4
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by mon 1pm 17
domain, t3 ends-by wed 10am 18
task, t1 2
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t4
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by mon 1pm 17
domain, t3 ends-by wed 10am 18
Splitting t1 into {4, 37, 5, 36, 12} and {13, 20, 21, 28, 29}
Splitting t1 into {4, 37} and {12, 36, 5}
Splitting t1 into {4} and {37}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
```

Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
task, t1 3
task, t2 1
task, t3 2
task, t4 2
domain, t1 ends-by tue 4pm 17
domain, t2 ends-by fri 11am 8
domain, t4 ends-by thu 9am 5
Nodes expanded to reach solution: 4
task, t1 3
task, t2 1
task, t3 2
task, t4 2
domain, t1 ends-by tue 4pm 17
domain, t2 ends-by fri 11am 8
domain, t4 ends-by thu 9am 5
task, t1 3
task, t2 1
task, t3 2
task, t4 2
domain, t1 ends-by tue 4pm 17
domain, t2 ends-by fri 11am 8
domain, t4 ends-by thu 9am 5
Nodes expanded to reach solution: 4
task, t1 3
task, t2 1
task, t3 2
task, t4 2
domain, t1 ends-by tue 4pm 17
domain, t2 ends-by fri 11am 8
domain, t4 ends-by thu 9am 5
task, t1 3
task, t2 1
task, t3 2
task, t4 2
domain, t1 ends-by tue 4pm 17
domain, t2 ends-by fri 11am 8
domain, t4 ends-by thu 9am 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}

```
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 before t2
constraint, t2 after t3
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 2pm 13
domain, t3 ends-by fri 12pm 15
domain, t4 ends-by thu 11am 14
Nodes expanded to reach solution: 68
task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 before t2
constraint, t2 after t3
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 2pm 13
domain, t3 ends-by fri 12pm 15
domain, t4 ends-by thu 11am 14
task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 before t2
constraint, t2 after t3
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 2pm 13
domain, t3 ends-by fri 12pm 15
domain, t4 ends-by thu 11am 14
Nodes expanded to reach solution: 4
task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 before t2
constraint, t2 after t3
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 2pm 13
domain, t3 ends-by fri 12pm 15
domain, t4 ends-by thu 11am 14
task, t1 1
task, t2 3
task, t3 4
task, t4 3
constraint, t1 before t2
constraint, t2 after t3
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 2pm 13
domain, t3 ends-by fri 12pm 15
domain, t4 ends-by thu 11am 14
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {3
2, 33, 34, 35, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
```

```
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t2 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t2 into {8, 4} and {9, 10, 11}
Splitting t2 into {8} and {4}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 3
task, t4 4
domain, t3 tue
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by tue 3pm 7
domain, t4 ends-by fri 11am 19
Nodes expanded to reach solution: 4
task, t1 4
task, t2 3
task, t3 3
task, t4 4
domain, t3 tue
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by tue 3pm 7
domain, t4 ends-by fri 11am 19
task, t1 4
task, t2 3
task, t3 3
task, t4 4
domain, t3 tue
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by tue 3pm 7
domain, t4 ends-by fri 11am 19
Nodes expanded to reach solution: 4
task, t1 4
task, t2 3
task, t3 3
task, t4 4
domain, t3 tue
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by tue 3pm 7
domain, t4 ends-by fri 11am 19
task, t1 4
task, t2 3
task, t3 3
task, t4 4
domain, t3 tue
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by tue 3pm 7
domain, t4 ends-by fri 11am 19
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
```

```
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {8, 9} and {10, 11, 12}
Splitting t3 into {8} and {9}
Splitting t4 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t4 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t4 into {0, 1} and {8, 2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t4
constraint, t3 starts-at t4
domain, t1 ends-by mon 2pm 15
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 11am 17
Nodes expanded to reach solution: 151
task, t1 3
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t4
constraint, t3 starts-at t4
domain, t1 ends-by mon 2pm 15
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 11am 17
task, t1 3
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t4
constraint, t3 starts-at t4
domain, t1 ends-by mon 2pm 15
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 11am 17
Nodes expanded to reach solution: 8
task, t1 3
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t4
constraint, t3 starts-at t4
domain, t1 ends-by mon 2pm 15
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 11am 17
task, t1 3
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t4
constraint, t3 starts-at t4
domain, t1 ends-by mon 2pm 15
```

```
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 11am 17
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {32, 16, 17, 18, 19, 20,
24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {33, 34, 35, 4, 36, 9, 10, 11} and {12, 17, 18, 19, 20, 25, 26,
27, 28}
Splitting t3 into {33, 34, 35, 4} and {9, 10, 11, 36}
Splitting t3 into {33, 34} and {35, 4}
Splitting t3 into {35} and {4}
task, t1 4
task, t2 1
task, t3 4
task, t4 3
domain, t4 mon
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by wed 9am 20
domain, t4 ends-by thu 10am 19
Nodes expanded to reach solution: 4
task, t1 4
task, t2 1
task, t3 4
task, t4 3
domain, t4 mon
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by wed 9am 20
domain, t4 ends-by thu 10am 19
task, t1 4
task, t2 1
task, t3 4
task, t4 3
domain, t4 mon
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by wed 9am 20
domain, t4 ends-by thu 10am 19
Nodes expanded to reach solution: 4
task, t1 4
task, t2 1
task, t3 4
task, t4 3
domain, t4 mon
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by wed 9am 20
domain, t4 ends-by thu 10am 19
task, t1 4
task, t2 1
task, t3 4
task, t4 3
domain, t4 mon
domain, t1 ends-by wed 4pm 15
domain, t2 ends-by wed 9am 20
domain, t4 ends-by thu 10am 19
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
```

24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and {32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 18}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 4
task, t2 4
task, t3 4
task, t4 2
constraint, t2 before t3
domain, t4 fri
domain, t2 ends-by mon 11am 16
domain, t3 ends-by tue 1pm 9
domain, t4 ends-by fri 3pm 12
Nodes expanded to reach solution: 8
task, t1 4
task, t2 4
task, t3 4
task, t4 2
constraint, t2 before t3
domain, t4 fri
domain, t2 ends-by mon 11am 16
domain, t3 ends-by tue 1pm 9
domain, t4 ends-by fri 3pm 12
task, t1 4
task, t2 4
task, t3 4
task, t4 2
constraint, t2 before t3
domain, t4 fri
domain, t2 ends-by mon 11am 16
domain, t3 ends-by tue 1pm 9
domain, t4 ends-by fri 3pm 12
Nodes expanded to reach solution: 4
task, t1 4
task, t2 4
task, t3 4
task, t4 2
constraint, t2 before t3
domain, t4 fri
domain, t2 ends-by mon 11am 16
domain, t3 ends-by tue 1pm 9
domain, t4 ends-by fri 3pm 12
task, t1 4
task, t2 4
task, t3 4
task, t4 2

```
constraint, t2 before t3
domain, t4 fri
domain, t2 ends-by mon 11am 16
domain, t3 ends-by tue 1pm 9
domain, t4 ends-by fri 3pm 12
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t3 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t3 into {8, 9} and {10, 11}
Splitting t3 into {8} and {9}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
task, t1 1
task, t2 4
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t1 ends-by fri 3pm 6
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by fri 10am 11
domain, t4 ends-by thu 2pm 13
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t1 ends-by fri 3pm 6
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by fri 10am 11
domain, t4 ends-by thu 2pm 13
task, t1 1
task, t2 4
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t1 ends-by fri 3pm 6
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by fri 10am 11
domain, t4 ends-by thu 2pm 13
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t1 ends-by fri 3pm 6
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by fri 10am 11
domain, t4 ends-by thu 2pm 13
task, t1 1
```

```
task, t2 4
task, t3 3
task, t4 4
constraint, t2 same-day t4
domain, t1 ends-by fri 3pm 6
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by fri 10am 11
domain, t4 ends-by thu 2pm 13
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 17
domain, t3 ends-by mon 2pm 5
Nodes expanded to reach solution: 4
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 17
domain, t3 ends-by mon 2pm 5
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 17
domain, t3 ends-by mon 2pm 5
Nodes expanded to reach solution: 4
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 17
domain, t3 ends-by mon 2pm 5
task, t1 3
task, t2 4
task, t3 2
```

```
task, t4 2
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 17
domain, t3 ends-by mon 2pm 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t3 before t4
domain, t3 wed
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 11am 5
domain, t3 ends-by thu 9am 16
domain, t4 ends-by tue 3pm 12
Nodes expanded to reach solution: 17
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t3 before t4
domain, t3 wed
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 11am 5
domain, t3 ends-by thu 9am 16
domain, t4 ends-by tue 3pm 12
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t3 before t4
domain, t3 wed
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 11am 5
domain, t3 ends-by thu 9am 16
domain, t4 ends-by tue 3pm 12
Nodes expanded to reach solution: 4
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t3 before t4
domain, t3 wed
domain, t1 ends-by tue 12pm 9
```

```
domain, t2 ends-by fri 11am 5
domain, t3 ends-by thu 9am 16
domain, t4 ends-by tue 3pm 12
task, t1 2
task, t2 4
task, t3 1
task, t4 2
constraint, t3 before t4
domain, t3 wed
domain, t1 ends-by tue 12pm 9
domain, t2 ends-by fri 11am 5
domain, t3 ends-by thu 9am 16
domain, t4 ends-by tue 3pm 12
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t3 into {16} and {17, 18}
Splitting t4 into {32, 33, 34, 35, 36, 37, 17, 18} and {19, 20, 21, 24, 25, 26, 2
7, 28, 29}
Splitting t4 into {32, 33, 34, 35} and {17, 18, 36, 37}
Splitting t4 into {17, 18} and {36, 37}
Splitting t4 into {17} and {18}
task, t1 2
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by fri 4pm 10
domain, t3 ends-by mon 3pm 17
domain, t4 ends-by thu 1pm 10
Nodes expanded to reach solution: 4
task, t1 2
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by fri 4pm 10
domain, t3 ends-by mon 3pm 17
domain, t4 ends-by thu 1pm 10
task, t1 2
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by fri 4pm 10
domain, t3 ends-by mon 3pm 17
domain, t4 ends-by thu 1pm 10
Nodes expanded to reach solution: 4
task, t1 2
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by fri 4pm 10
domain, t3 ends-by mon 3pm 17
domain, t4 ends-by thu 1pm 10
```

```
task, t1 2
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by fri 4pm 10
domain, t3 ends-by mon 3pm 17
domain, t4 ends-by thu 1pm 10
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
task, t1 1
task, t2 4
task, t3 4
task, t4 3
domain, t1 ends-by wed 1pm 10
domain, t2 ends-by fri 2pm 14
domain, t3 ends-by fri 11am 15
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 4
task, t4 3
domain, t1 ends-by wed 1pm 10
domain, t2 ends-by fri 2pm 14
domain, t3 ends-by fri 11am 15
task, t1 1
task, t2 4
task, t3 4
task, t4 3
domain, t1 ends-by wed 1pm 10
domain, t2 ends-by fri 2pm 14
domain, t3 ends-by fri 11am 15
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 4
task, t4 3
domain, t1 ends-by wed 1pm 10
domain, t2 ends-by fri 2pm 14
domain, t3 ends-by fri 11am 15
task, t1 1
```

```
task, t2 4
task, t3 4
task, t4 3
domain, t1 ends-by wed 1pm 10
domain, t2 ends-by fri 2pm 14
domain, t3 ends-by fri 11am 15
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 4
task, t4 2
domain, t1 ends-by mon 4pm 9
domain, t2 ends-by thu 11am 17
domain, t3 ends-by wed 10am 15
domain, t4 ends-by thu 2pm 17
Nodes expanded to reach solution: 4
task, t1 2
task, t2 1
task, t3 4
task, t4 2
domain, t1 ends-by mon 4pm 9
domain, t2 ends-by thu 11am 17
domain, t3 ends-by wed 10am 15
domain, t4 ends-by thu 2pm 17
task, t1 2
task, t2 1
task, t3 4
task, t4 2
domain, t1 ends-by mon 4pm 9
domain, t2 ends-by thu 11am 17
domain, t3 ends-by wed 10am 15
domain, t4 ends-by thu 2pm 17
Nodes expanded to reach solution: 4
task, t1 2
task, t2 1
task, t3 4
task, t4 2
domain, t1 ends-by mon 4pm 9
domain, t2 ends-by thu 11am 17
```

```
domain, t3 ends-by wed 10am 15
domain, t4 ends-by thu 2pm 17
task, t1 2
task, t2 1
task, t3 4
task, t4 2
domain, t1 ends-by mon 4pm 9
domain, t2 ends-by thu 11am 17
domain, t3 ends-by wed 10am 15
domain, t4 ends-by thu 2pm 17
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t4 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t4 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 3
task, t4 3
domain, t1 tue
domain, t1 ends-by tue 4pm 18
domain, t3 ends-by thu 9am 6
domain, t4 ends-by wed 3pm 17
Nodes expanded to reach solution: 4
task, t1 2
task, t2 1
task, t3 3
task, t4 3
domain, t1 tue
domain, t1 ends-by tue 4pm 18
domain, t3 ends-by thu 9am 6
domain, t4 ends-by wed 3pm 17
task, t1 2
task, t2 1
task, t3 3
task, t4 3
domain, t1 tue
domain, t1 ends-by tue 4pm 18
domain, t3 ends-by thu 9am 6
domain, t4 ends-by wed 3pm 17
Nodes expanded to reach solution: 4
task, t1 2
task, t2 1
```

```
task, t3 3
task, t4 3
domain, t1 tue
domain, t1 ends-by tue 4pm 18
domain, t3 ends-by thu 9am 6
domain, t4 ends-by wed 3pm 17
task, t1 2
task, t2 1
task, t3 3
task, t4 3
domain, t1 tue
domain, t1 ends-by tue 4pm 18
domain, t3 ends-by thu 9am 6
domain, t4 ends-by wed 3pm 17
Splitting t1 into {8, 9, 10} and {11, 12, 13}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 4
task, t4 3
constraint, t1 starts-at t2
constraint, t2 same-day t3
constraint, t2 after t4
domain, t4 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by thu 10am 19
domain, t3 ends-by wed 11am 14
domain, t4 ends-by thu 3pm 5
task, t1 4
task, t2 4
task, t3 4
task, t4 3
constraint, t1 starts-at t2
constraint, t2 same-day t3
constraint, t2 after t4
domain, t4 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by thu 10am 19
domain, t3 ends-by wed 11am 14
domain, t4 ends-by thu 3pm 5
task, t1 4
task, t2 4
task, t3 4
```

```
task, t4 3
constraint, t1 starts-at t2
constraint, t2 same-day t3
constraint, t2 after t4
domain, t4 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by thu 10am 19
domain, t3 ends-by wed 11am 14
domain, t4 ends-by thu 3pm 5
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 4
task, t3 2
task, t4 3
constraint, t2 after t4
domain, t1 ends-by thu 4pm 20
domain, t3 ends-by thu 9am 5
Nodes expanded to reach solution: 2347
task, t1 2
task, t2 4
task, t3 2
task, t4 3
constraint, t2 after t4
domain, t1 ends-by thu 4pm 20
domain, t3 ends-by thu 9am 5
task, t1 2
task, t2 4
task, t3 2
task, t4 3
constraint, t2 after t4
domain, t1 ends-by thu 4pm 20
domain, t3 ends-by thu 9am 5
Nodes expanded to reach solution: 7
task, t1 2
task, t2 4
task, t3 2
task, t4 3
constraint, t2 after t4
domain, t1 ends-by thu 4pm 20
domain, t3 ends-by thu 9am 5
task, t1 2
task, t2 4
task, t3 2
task, t4 3
constraint, t2 after t4
domain, t1 ends-by thu 4pm 20
domain, t3 ends-by thu 9am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t2 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t2 into {32, 33} and {34, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
```

```
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12} and {16, 17, 18, 19, 20, 24,
25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 4
task, t3 2
task, t4 3
constraint, t1 same-day t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 9
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 12pm 20
Nodes expanded to reach solution: 8
task, t1 3
task, t2 4
task, t3 2
task, t4 3
constraint, t1 same-day t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 9
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 12pm 20
task, t1 3
task, t2 4
task, t3 2
task, t4 3
constraint, t1 same-day t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 9
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 12pm 20
Nodes expanded to reach solution: 4
task, t1 3
task, t2 4
task, t3 2
task, t4 3
constraint, t1 same-day t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 9
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 12pm 20
task, t1 3
task, t2 4
task, t3 2
task, t4 3
constraint, t1 same-day t3
constraint, t2 before t4
domain, t1 ends-by tue 9am 9
domain, t3 ends-by thu 10am 19
domain, t4 ends-by thu 12pm 20
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 32, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26,
```

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27}
Splitting t2 into {0, 1, 2, 3} and {32, 8, 10, 9}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t4 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t4 into {8, 4} and {9, 10, 11}
Splitting t4 into {8} and {4}
task, t1 1
task, t2 3
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 before t4
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 2pm 16
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by mon 12pm 9
task, t1 1
task, t2 3
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 before t4
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 2pm 16
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by mon 12pm 9
task, t1 1
task, t2 3
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 before t4
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 2pm 16
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by mon 12pm 9
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 4
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by wed 9am 6
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by fri 2pm 6
Nodes expanded to reach solution: 4
task, t1 3
task, t2 3
```

```
task, t3 4
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by wed 9am 6
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by fri 2pm 6
task, t1 3
task, t2 3
task, t3 4
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by wed 9am 6
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by fri 2pm 6
Nodes expanded to reach solution: 4
task, t1 3
task, t2 3
task, t3 4
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by wed 9am 6
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by fri 2pm 6
task, t1 3
task, t2 3
task, t3 4
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by wed 9am 6
domain, t3 ends-by mon 3pm 6
domain, t4 ends-by fri 2pm 6
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 1
task, t3 3
task, t4 1
task, t5 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t2 before t5
```

```
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by fri 11am 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 11
domain, t4 ends-by tue 10am 7
domain, t5 ends-by tue 1pm 10
Nodes expanded to reach solution: 9
task, t1 4
task, t2 1
task, t3 3
task, t4 1
task, t5 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by fri 11am 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 11
domain, t4 ends-by tue 10am 7
domain, t5 ends-by tue 1pm 10
task, t1 4
task, t2 1
task, t3 3
task, t4 1
task, t5 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by fri 11am 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 11
domain, t4 ends-by tue 10am 7
domain, t5 ends-by tue 1pm 10
Nodes expanded to reach solution: 5
task, t1 4
task, t2 1
task, t3 3
task, t4 1
task, t5 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by fri 11am 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 11
domain, t4 ends-by tue 10am 7
domain, t5 ends-by tue 1pm 10
task, t1 4
task, t2 1
task, t3 3
task, t4 1
task, t5 2
constraint, t1 same-day t3
```

```
constraint, t1 before t5
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by fri 11am 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 11
domain, t4 ends-by tue 10am 7
domain, t5 ends-by tue 1pm 10
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {3
2, 33, 34, 35, 36, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17} and {3
2, 33, 34, 35, 36, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t5 into {8, 4, 5} and {9, 10, 11}
Splitting t5 into {8} and {4, 5}
task, t1 2
task, t2 4
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 after t5
constraint, t4 same-day t5
domain, t1 ends-by fri 9am 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by tue 9am 17
domain, t4 ends-by mon 2pm 18
domain, t5 ends-by thu 2pm 19
Nodes expanded to reach solution: 16300
task, t1 2
task, t2 4
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 after t5
constraint, t4 same-day t5
domain, t1 ends-by fri 9am 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by tue 9am 17
```

```
domain, t4 ends-by mon 2pm 18
domain, t5 ends-by thu 2pm 19
task, t1 2
task, t2 4
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 after t5
constraint, t4 same-day t5
domain, t1 ends-by fri 9am 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by tue 9am 17
domain, t4 ends-by mon 2pm 18
domain, t5 ends-by thu 2pm 19
Nodes expanded to reach solution: 10
task, t1 2
task, t2 4
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 after t5
constraint, t4 same-day t5
domain, t1 ends-by fri 9am 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by tue 9am 17
domain, t4 ends-by mon 2pm 18
domain, t5 ends-by thu 2pm 19
task, t1 2
task, t2 4
task, t3 3
task, t4 1
task, t5 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t3 after t5
constraint, t4 same-day t5
domain, t1 ends-by fri 9am 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by tue 9am 17
domain, t4 ends-by mon 2pm 18
domain, t5 ends-by thu 2pm 19
Splitting t1 into {1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 18,
19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16}
Splitting t1 into {1, 2, 3} and {8, 4, 5}
Splitting t1 into {1} and {2, 3}
Splitting t2 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t2 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t2 into {32, 33} and {34, 3}
Splitting t2 into {32} and {33}
Splitting t3 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4}
Splitting t3 into {1} and {2, 3}
```

```
task, t1 1
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t2 starts-at t3
constraint, t4 after t5
domain, t3 fri
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by wed 2pm 13
Nodes expanded to reach solution: 5862
task, t1 1
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t2 starts-at t3
constraint, t4 after t5
domain, t3 fri
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by wed 2pm 13
task, t1 1
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t2 starts-at t3
constraint, t4 after t5
domain, t3 fri
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by wed 2pm 13
Nodes expanded to reach solution: 9
task, t1 1
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t2 starts-at t3
constraint, t4 after t5
domain, t3 fri
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by wed 2pm 13
task, t1 1
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t2 starts-at t3
constraint, t4 after t5
domain, t3 fri
domain, t1 ends-by thu 4pm 8
domain, t2 ends-by wed 2pm 13
Splitting t1 into {35, 36} and {37, 38}
Splitting t1 into {35} and {36}
Splitting t4 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
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27}
Splitting t4 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t4 into {32, 33} and {34, 35}
Splitting t4 into {32} and {33}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t5 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t1 before t2
constraint, t1 starts-at t4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t4 wed
domain, t1 ends-by fri 2pm 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by wed 9am 13
domain, t4 ends-by fri 10am 11
domain, t5 ends-by thu 2pm 15
task, t1 4
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t1 before t2
constraint, t1 starts-at t4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t4 wed
domain, t1 ends-by fri 2pm 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by wed 9am 13
domain, t4 ends-by fri 10am 11
domain, t5 ends-by thu 2pm 15
task, t1 4
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t1 before t2
constraint, t1 starts-at t4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t2 same-day t4
domain, t4 wed
domain, t1 ends-by fri 2pm 17
domain, t2 ends-by fri 3pm 14
domain, t3 ends-by wed 9am 13
domain, t4 ends-by fri 10am 11
domain, t5 ends-by thu 2pm 15
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 3
task, t3 3
```

```
task, t4 4
task, t5 2
constraint, t1 same-day t5
constraint, t2 starts-at t4
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 after t5
constraint, t4 before t5
domain, t2 mon
domain, t1 ends-by fri 3pm 14
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by fri 12pm 8
domain, t4 ends-by wed 9am 15
task, t1 2
task, t2 3
task, t3 3
task, t4 4
task, t5 2
constraint, t1 same-day t5
constraint, t2 starts-at t4
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 after t5
constraint, t4 before t5
domain, t2 mon
domain, t1 ends-by fri 3pm 14
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by fri 12pm 8
domain, t4 ends-by wed 9am 15
task, t1 2
task, t2 3
task, t3 3
task, t4 4
task, t5 2
constraint, t1 same-day t5
constraint, t2 starts-at t4
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 after t5
constraint, t4 before t5
domain, t2 mon
domain, t1 ends-by fri 3pm 14
domain, t2 ends-by tue 12pm 14
domain, t3 ends-by fri 12pm 8
domain, t4 ends-by wed 9am 15
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by fri 9am 7
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by thu 10am 14
domain, t5 ends-by wed 11am 5
Nodes expanded to reach solution: 6
task, t1 1
task, t2 1
```

```
task, t3 1
task, t4 3
task, t5 1
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by fri 9am 7
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by thu 10am 14
domain, t5 ends-by wed 11am 5
task, t1 1
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by fri 9am 7
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by thu 10am 14
domain, t5 ends-by wed 11am 5
Nodes expanded to reach solution: 6
task, t1 1
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by fri 9am 7
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by thu 10am 14
domain, t5 ends-by wed 11am 5
task, t1 1
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by fri 9am 7
domain, t2 ends-by tue 3pm 20
domain, t3 ends-by thu 10am 14
domain, t5 ends-by wed 11am 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t2 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
```

36, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t4 into {1, 2, 3} and {8, 9, 4}
Splitting t4 into {1} and {2, 3}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 4
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t3
constraint, t2 same-day t3
domain, t2 thu
domain, t1 ends-by wed 12pm 12
domain, t2 ends-by wed 3pm 15
domain, t3 ends-by fri 3pm 6
domain, t4 ends-by fri 9am 13
domain, t5 ends-by mon 12pm 15
Nodes expanded to reach solution: 2375
task, t1 4
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t3
constraint, t2 same-day t3
domain, t2 thu
domain, t1 ends-by wed 12pm 12
domain, t2 ends-by wed 3pm 15
domain, t3 ends-by fri 3pm 6
domain, t4 ends-by fri 9am 13
domain, t5 ends-by mon 12pm 15
task, t1 4
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t3
constraint, t2 same-day t3
domain, t2 thu
domain, t1 ends-by wed 12pm 12
domain, t2 ends-by wed 3pm 15
domain, t3 ends-by fri 3pm 6
domain, t4 ends-by fri 9am 13
domain, t5 ends-by mon 12pm 15
Nodes expanded to reach solution: 5
task, t1 4
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t3
constraint, t2 same-day t3
domain, t2 thu

```
domain, t1 ends-by wed 12pm 12
domain, t2 ends-by wed 3pm 15
domain, t3 ends-by fri 3pm 6
domain, t4 ends-by fri 9am 13
domain, t5 ends-by mon 12pm 15
task, t1 4
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 after t3
constraint, t2 same-day t3
domain, t2 thu
domain, t1 ends-by wed 12pm 12
domain, t2 ends-by wed 3pm 15
domain, t3 ends-by fri 3pm 6
domain, t4 ends-by fri 9am 13
domain, t5 ends-by mon 12pm 15
Splitting t1 into {32, 33} and {27, 34, 35}
Splitting t1 into {27} and {34, 35}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t4 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 4
task, t3 3
task, t4 3
task, t5 3
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t4 after t5
domain, t1 tue
domain, t1 ends-by wed 11am 11
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by mon 1pm 6
domain, t4 ends-by mon 2pm 10
domain, t5 ends-by tue 12pm 5
Nodes expanded to reach solution: 5226
task, t1 3
task, t2 4
task, t3 3
task, t4 3
task, t5 3
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t4 after t5
domain, t1 tue
```

```
domain, t1 ends-by wed 11am 11
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by mon 1pm 6
domain, t4 ends-by mon 2pm 10
domain, t5 ends-by tue 12pm 5
task, t1 3
task, t2 4
task, t3 3
task, t4 3
task, t5 3
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t4 after t5
domain, t1 tue
domain, t1 ends-by wed 11am 11
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by mon 1pm 6
domain, t4 ends-by mon 2pm 10
domain, t5 ends-by tue 12pm 5
Nodes expanded to reach solution: 5
task, t1 3
task, t2 4
task, t3 3
task, t4 3
task, t5 3
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t4 after t5
domain, t1 tue
domain, t1 ends-by wed 11am 11
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by mon 1pm 6
domain, t4 ends-by mon 2pm 10
domain, t5 ends-by tue 12pm 5
task, t1 3
task, t2 4
task, t3 3
task, t4 3
task, t5 3
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t4 after t5
domain, t1 tue
domain, t1 ends-by wed 11am 11
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by mon 1pm 6
domain, t4 ends-by mon 2pm 10
domain, t5 ends-by tue 12pm 5
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {32, 33, 34, 35, 16, 17} and {18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 34} and {16, 17, 35}
Splitting t2 into {16} and {17, 35}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
```

Splitting t3 into {0} and {1, 2}
Splitting t4 into {11} and {12}
task, t1 4
task, t2 4
task, t3 4
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 before t5
domain, t1 ends-by tue 12pm 11
domain, t2 ends-by wed 1pm 14
domain, t3 ends-by wed 3pm 12
domain, t4 ends-by fri 12pm 6
domain, t5 ends-by fri 9am 12
Nodes expanded to reach solution: 1389
task, t1 4
task, t2 4
task, t3 4
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 before t5
domain, t1 ends-by tue 12pm 11
domain, t2 ends-by wed 1pm 14
domain, t3 ends-by wed 3pm 12
domain, t4 ends-by fri 12pm 6
domain, t5 ends-by fri 9am 12
task, t1 4
task, t2 4
task, t3 4
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 before t5
domain, t1 ends-by tue 12pm 11
domain, t2 ends-by wed 1pm 14
domain, t3 ends-by wed 3pm 12
domain, t4 ends-by fri 12pm 6
domain, t5 ends-by fri 9am 12
Nodes expanded to reach solution: 9
task, t1 4
task, t2 4
task, t3 4
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 before t5
domain, t1 ends-by tue 12pm 11

```
domain, t2 ends-by wed 1pm 14
domain, t3 ends-by wed 3pm 12
domain, t4 ends-by fri 12pm 6
domain, t5 ends-by fri 9am 12
task, t1 4
task, t2 4
task, t3 4
task, t4 4
task, t5 4
constraint, t1 before t2
constraint, t1 after t3
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 before t5
domain, t1 ends-by tue 12pm 11
domain, t2 ends-by wed 1pm 14
domain, t3 ends-by wed 3pm 12
domain, t4 ends-by fri 12pm 6
domain, t5 ends-by fri 9am 12
Splitting t1 into {8, 9, 10, 11, 16, 17} and {18, 19, 24, 25, 26, 27}
Splitting t1 into {8, 9, 10} and {16, 17, 11}
Splitting t1 into {8} and {9, 10}
Splitting t2 into {32, 33, 34, 35, 16, 17} and {18, 19, 24, 25, 26, 27}
Splitting t2 into {32, 33, 34} and {16, 17, 35}
Splitting t2 into {16} and {17, 35}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {16, 17} and {18, 19}
Splitting t4 into {16} and {17}
Splitting t5 into {8, 9} and {10, 11}
Splitting t5 into {8} and {9}
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by fri 2pm 12
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by fri 2pm 12
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 3
```

```
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t3 after t5
constraint, t4 before t5
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by fri 2pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 3
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t3 before t5
domain, t3 thu
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 9am 8
domain, t4 ends-by fri 1pm 19
domain, t5 ends-by fri 4pm 5
Nodes expanded to reach solution: 3389
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 3
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t3 before t5
domain, t3 thu
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 9am 8
domain, t4 ends-by fri 1pm 19
domain, t5 ends-by fri 4pm 5
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 3
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t3 before t5
domain, t3 thu
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 9am 8
domain, t4 ends-by fri 1pm 19
domain, t5 ends-by fri 4pm 5
Nodes expanded to reach solution: 5
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 3
```

```
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t3 before t5
domain, t3 thu
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 9am 8
domain, t4 ends-by fri 1pm 19
domain, t5 ends-by fri 4pm 5
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 3
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 same-day t3
constraint, t3 before t5
domain, t3 thu
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by wed 2pm 17
domain, t3 ends-by fri 9am 8
domain, t4 ends-by fri 1pm 19
domain, t5 ends-by fri 4pm 5
Splitting t1 into {24, 25, 26} and {27, 28, 29}
Splitting t1 into {24} and {25, 26}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {24} and {25}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {27} and {28}
task, t1 3
task, t2 2
task, t3 2
task, t4 1
task, t5 1
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 10am 14
domain, t3 ends-by mon 9am 5
Nodes expanded to reach solution: 7
task, t1 3
task, t2 2
task, t3 2
task, t4 1
task, t5 1
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 10am 14
domain, t3 ends-by mon 9am 5
task, t1 3
task, t2 2
task, t3 2
```

```
task, t4 1
task, t5 1
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 10am 14
domain, t3 ends-by mon 9am 5
Nodes expanded to reach solution: 5
task, t1 3
task, t2 2
task, t3 2
task, t4 1
task, t5 1
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 10am 14
domain, t3 ends-by mon 9am 5
task, t1 3
task, t2 2
task, t3 2
task, t4 1
task, t5 1
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by fri 1pm 19
domain, t2 ends-by thu 10am 14
domain, t3 ends-by mon 9am 5
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 36, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19} and
{32, 33, 34, 35, 36, 37, 38, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t4 into {2, 3, 4, 5, 6, 8, 9, 10} and {11, 12, 13, 14, 16, 17, 18, 19}
Splitting t4 into {2, 3, 4, 5} and {8, 9, 10, 6}
Splitting t4 into {2, 3} and {4, 5}
Splitting t4 into {2} and {3}
Splitting t5 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t5 into {8} and {9, 10}
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t3 before t4
constraint, t4 same-day t5
```

```
domain, t1 ends-by mon 2pm 5
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 16
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by thu 11am 20
Nodes expanded to reach solution: 6
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by mon 2pm 5
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 16
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by thu 11am 20
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by mon 2pm 5
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 16
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by thu 11am 20
Nodes expanded to reach solution: 6
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by mon 2pm 5
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 16
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by thu 11am 20
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by mon 2pm 5
domain, t2 ends-by wed 2pm 14
```

```
domain, t3 ends-by thu 11am 16
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by thu 11am 20
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1} and {2, 3}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 1
constraint, t1 same-day t3
constraint, t2 before t5
constraint, t3 after t4
constraint, t4 same-day t5
domain, t2 tue
domain, t3 thu
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by mon 4pm 5
Nodes expanded to reach solution: 1120
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 1
constraint, t1 same-day t3
constraint, t2 before t5
constraint, t3 after t4
constraint, t4 same-day t5
domain, t2 tue
domain, t3 thu
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by mon 4pm 5
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 1
constraint, t1 same-day t3
constraint, t2 before t5
constraint, t3 after t4
constraint, t4 same-day t5
domain, t2 tue
```

```
domain, t3 thu
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by mon 4pm 5
Nodes expanded to reach solution: 12
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 1
constraint, t1 same-day t3
constraint, t2 before t5
constraint, t3 after t4
constraint, t4 same-day t5
domain, t2 tue
domain, t3 thu
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by mon 4pm 5
task, t1 3
task, t2 1
task, t3 1
task, t4 1
task, t5 1
constraint, t1 same-day t3
constraint, t2 before t5
constraint, t3 after t4
constraint, t4 same-day t5
domain, t2 tue
domain, t3 thu
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 1pm 8
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by mon 4pm 5
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t2 into {8} and {9, 10}
Splitting t3 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {8, 9, 10, 11, 12, 13, 14} and {16, 17, 18, 19, 20, 21, 22}
Splitting t4 into {8, 9, 10} and {11, 12, 13, 14}
Splitting t4 into {8} and {9, 10}
Splitting t5 into {9, 10, 11} and {12, 13, 14}
Splitting t5 into {9} and {10, 11}
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 starts-at t4
constraint, t1 before t5
domain, t1 ends-by tue 3pm 7
domain, t2 ends-by thu 12pm 15
```

```
domain, t3 ends-by thu 2pm 16
domain, t5 ends-by fri 9am 13
Nodes expanded to reach solution: 2537
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 starts-at t4
constraint, t1 before t5
domain, t1 ends-by tue 3pm 7
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by thu 2pm 16
domain, t5 ends-by fri 9am 13
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 starts-at t4
constraint, t1 before t5
domain, t1 ends-by tue 3pm 7
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by thu 2pm 16
domain, t5 ends-by fri 9am 13
Nodes expanded to reach solution: 5
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 starts-at t4
constraint, t1 before t5
domain, t1 ends-by tue 3pm 7
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by thu 2pm 16
domain, t5 ends-by fri 9am 13
task, t1 1
task, t2 2
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 starts-at t4
constraint, t1 before t5
domain, t1 ends-by tue 3pm 7
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by thu 2pm 16
domain, t5 ends-by fri 9am 13
Splitting t1 into {4, 5, 6, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20} and {33, 34, 3
5, 36, 37, 21, 22, 25, 26, 27, 28, 29, 30}
Splitting t1 into {4, 5, 6, 9, 10, 11} and {12, 13, 14, 17, 18, 19, 20}
Splitting t1 into {4, 5, 6} and {9, 10, 11}
Splitting t1 into {4} and {5, 6}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
```

```
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t5 into {5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {3
2, 33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {5, 6, 8, 9, 10, 11, 12} and {13, 14, 16, 17, 18, 19, 20, 21}
Splitting t5 into {8, 5, 6} and {9, 10, 11, 12}
Splitting t5 into {8} and {5, 6}
task, t1 4
task, t2 2
task, t3 1
task, t4 3
task, t5 3
constraint, t1 after t4
domain, t3 fri
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 9am 15
domain, t3 ends-by tue 3pm 13
domain, t4 ends-by tue 10am 15
domain, t5 ends-by wed 11am 5
Nodes expanded to reach solution: 16478
task, t1 4
task, t2 2
task, t3 1
task, t4 3
task, t5 3
constraint, t1 after t4
domain, t3 fri
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 9am 15
domain, t3 ends-by tue 3pm 13
domain, t4 ends-by tue 10am 15
domain, t5 ends-by wed 11am 5
task, t1 4
task, t2 2
task, t3 1
task, t4 3
task, t5 3
constraint, t1 after t4
domain, t3 fri
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 9am 15
domain, t3 ends-by tue 3pm 13
domain, t4 ends-by tue 10am 15
domain, t5 ends-by wed 11am 5
Nodes expanded to reach solution: 8
task, t1 4
task, t2 2
task, t3 1
task, t4 3
task, t5 3
constraint, t1 after t4
domain, t3 fri
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 9am 15
domain, t3 ends-by tue 3pm 13
domain, t4 ends-by tue 10am 15
domain, t5 ends-by wed 11am 5
task, t1 4
task, t2 2
task, t3 1
```

```
task, t4 3
task, t5 3
constraint, t1 after t4
domain, t3 fri
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by thu 9am 15
domain, t3 ends-by tue 3pm 13
domain, t4 ends-by tue 10am 15
domain, t5 ends-by wed 11am 5
Splitting t1 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t1 into {32, 33} and {34, 3}
Splitting t1 into {34} and {3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34} and {35, 36, 37, 38}
Splitting t3 into {32} and {33, 34}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 1
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t2
constraint, t1 before t5
constraint, t2 same-day t4
domain, t1 mon
domain, t1 ends-by wed 3pm 19
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by thu 10am 17
Nodes expanded to reach solution: 7
task, t1 2
task, t2 1
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t2
constraint, t1 before t5
constraint, t2 same-day t4
domain, t1 mon
domain, t1 ends-by wed 3pm 19
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by thu 10am 17
task, t1 2
task, t2 1
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t2
constraint, t1 before t5
constraint, t2 same-day t4
domain, t1 mon
```

```
domain, t1 ends-by wed 3pm 19
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by thu 10am 17
Nodes expanded to reach solution: 5
task, t1 2
task, t2 1
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t2
constraint, t1 before t5
constraint, t2 same-day t4
domain, t1 mon
domain, t1 ends-by wed 3pm 19
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by thu 10am 17
task, t1 2
task, t2 1
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t2
constraint, t1 before t5
constraint, t2 same-day t4
domain, t1 mon
domain, t1 ends-by wed 3pm 19
domain, t3 ends-by fri 3pm 11
domain, t5 ends-by thu 10am 17
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t5 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t5 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t5 into {2} and {3, 4}
task, t1 2
task, t2 2
task, t3 1
task, t4 3
task, t5 2
constraint, t1 before t2
constraint, t1 before t5
constraint, t4 after t5
domain, t1 ends-by tue 1pm 12
domain, t3 ends-by fri 10am 14
domain, t4 ends-by wed 3pm 15
domain, t5 ends-by thu 1pm 18
Nodes expanded to reach solution: 133
task, t1 2
task, t2 2
task, t3 1
```

```
task, t4 3
task, t5 2
constraint, t1 before t2
constraint, t1 before t5
constraint, t4 after t5
domain, t1 ends-by tue 1pm 12
domain, t3 ends-by fri 10am 14
domain, t4 ends-by wed 3pm 15
domain, t5 ends-by thu 1pm 18
task, t1 2
task, t2 2
task, t3 1
task, t4 3
task, t5 2
constraint, t1 before t2
constraint, t1 before t5
constraint, t4 after t5
domain, t1 ends-by tue 1pm 12
domain, t3 ends-by fri 10am 14
domain, t4 ends-by wed 3pm 15
domain, t5 ends-by thu 1pm 18
Nodes expanded to reach solution: 14
task, t1 2
task, t2 2
task, t3 1
task, t4 3
task, t5 2
constraint, t1 before t2
constraint, t1 before t5
constraint, t4 after t5
domain, t1 ends-by tue 1pm 12
domain, t3 ends-by fri 10am 14
domain, t4 ends-by wed 3pm 15
domain, t5 ends-by thu 1pm 18
task, t1 2
task, t2 2
task, t3 1
task, t4 3
task, t5 2
constraint, t1 before t2
constraint, t1 before t5
constraint, t4 after t5
domain, t1 ends-by tue 1pm 12
domain, t3 ends-by fri 10am 14
domain, t4 ends-by wed 3pm 15
domain, t5 ends-by thu 1pm 18
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {32, 16, 17, 18, 1
9, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t2 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t2 into {2} and {3, 4}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t3 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
```

```
Splitting t3 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 36,
20, 24, 25, 26, 27, 28}
Splitting t4 into {4, 8, 9, 10, 11} and {12, 16, 17, 18, 19}
Splitting t4 into {8, 4} and {9, 10, 11}
Splitting t4 into {8} and {4}
Splitting t5 into {2, 3} and {4, 5}
Splitting t5 into {2} and {3}
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 before t5
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 10am 9
domain, t3 ends-by thu 2pm 6
domain, t4 ends-by wed 4pm 20
domain, t5 ends-by fri 10am 12
Nodes expanded to reach solution: 13
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 before t5
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 10am 9
domain, t3 ends-by thu 2pm 6
domain, t4 ends-by wed 4pm 20
domain, t5 ends-by fri 10am 12
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 before t5
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 10am 9
domain, t3 ends-by thu 2pm 6
domain, t4 ends-by wed 4pm 20
domain, t5 ends-by fri 10am 12
Nodes expanded to reach solution: 5
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 before t5
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 10am 9
domain, t3 ends-by thu 2pm 6
domain, t4 ends-by wed 4pm 20
domain, t5 ends-by fri 10am 12
```

```
task, t1 3
task, t2 2
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 before t5
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by fri 10am 9
domain, t3 ends-by thu 2pm 6
domain, t4 ends-by wed 4pm 20
domain, t5 ends-by fri 10am 12
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {32, 33, 34, 35, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26,
27}
Splitting t4 into {32, 33, 34, 35} and {8, 9, 10, 11}
Splitting t4 into {8, 9} and {10, 11}
Splitting t4 into {8} and {9}
Splitting t5 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t5 into {8, 4, 5} and {9, 10, 11}
Splitting t5 into {8} and {4, 5}
task, t1 4
task, t2 4
task, t3 3
task, t4 1
task, t5 4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
domain, t2 ends-by tue 3pm 11
domain, t4 ends-by tue 3pm 17
domain, t5 ends-by thu 11am 16
Nodes expanded to reach solution: 857
task, t1 4
task, t2 4
task, t3 3
task, t4 1
task, t5 4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
```

```
domain, t2 ends-by tue 3pm 11
domain, t4 ends-by tue 3pm 17
domain, t5 ends-by thu 11am 16
task, t1 4
task, t2 4
task, t3 3
task, t4 1
task, t5 4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
domain, t2 ends-by tue 3pm 11
domain, t4 ends-by tue 3pm 17
domain, t5 ends-by thu 11am 16
Nodes expanded to reach solution: 93
task, t1 4
task, t2 4
task, t3 3
task, t4 1
task, t5 4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
domain, t2 ends-by tue 3pm 11
domain, t4 ends-by tue 3pm 17
domain, t5 ends-by thu 11am 16
task, t1 4
task, t2 4
task, t3 3
task, t4 1
task, t5 4
constraint, t1 before t5
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t3 after t5
domain, t3 tue
domain, t2 ends-by tue 3pm 11
domain, t4 ends-by tue 3pm 17
domain, t5 ends-by thu 11am 16
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t4 into {0, 1, 2, 3, 4} and {5, 6, 8, 9, 10, 11}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t3 after t5
domain, t4 thu
```

```
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by tue 9am 7
domain, t3 ends-by wed 11am 20
domain, t4 ends-by wed 2pm 6
Nodes expanded to reach solution: 574301
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t3 after t5
domain, t4 thu
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by tue 9am 7
domain, t3 ends-by wed 11am 20
domain, t4 ends-by wed 2pm 6
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t3 after t5
domain, t4 thu
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by tue 9am 7
domain, t3 ends-by wed 11am 20
domain, t4 ends-by wed 2pm 6
Nodes expanded to reach solution: 5
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t3 after t5
domain, t4 thu
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by tue 9am 7
domain, t3 ends-by wed 11am 20
domain, t4 ends-by wed 2pm 6
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 4
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t3 after t5
domain, t4 thu
domain, t1 ends-by wed 4pm 13
domain, t2 ends-by tue 9am 7
```

```
domain, t3 ends-by wed 11am 20
domain, t4 ends-by wed 2pm 6
Splitting t1 into {36} and {28}
Splitting t2 into {28} and {29, 30}
Splitting t3 into {32, 33, 34, 35, 36} and {37, 38, 28, 29, 30}
Splitting t3 into {37, 38} and {28, 29, 30}
Splitting t3 into {28} and {29, 30}
task, t1 3
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t3 after t4
constraint, t3 same-day t5
domain, t1 tue
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by mon 3pm 14
domain, t3 ends-by thu 9am 18
domain, t4 ends-by tue 1pm 7
domain, t5 ends-by fri 9am 11
Nodes expanded to reach solution: 942
task, t1 3
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t3 after t4
constraint, t3 same-day t5
domain, t1 tue
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by mon 3pm 14
domain, t3 ends-by thu 9am 18
domain, t4 ends-by tue 1pm 7
domain, t5 ends-by fri 9am 11
task, t1 3
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t3 after t4
constraint, t3 same-day t5
domain, t1 tue
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by mon 3pm 14
domain, t3 ends-by thu 9am 18
domain, t4 ends-by tue 1pm 7
domain, t5 ends-by fri 9am 11
Nodes expanded to reach solution: 6
task, t1 3
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t3 after t4
constraint, t3 same-day t5
domain, t1 tue
```

```
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by mon 3pm 14
domain, t3 ends-by thu 9am 18
domain, t4 ends-by tue 1pm 7
domain, t5 ends-by fri 9am 11
task, t1 3
task, t2 3
task, t3 3
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t3 after t4
constraint, t3 same-day t5
domain, t1 tue
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by mon 3pm 14
domain, t3 ends-by thu 9am 18
domain, t4 ends-by tue 1pm 7
domain, t5 ends-by fri 9am 11
Splitting t1 into {8, 9} and {10, 11, 12}
Splitting t1 into {8} and {9}
Splitting t2 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t2 into {1, 2, 3} and {8, 9, 4}
Splitting t2 into {1} and {2, 3}
Splitting t3 into {1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18} and {32, 33, 34, 35,
36, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {1, 2, 3, 4, 8, 9} and {10, 11, 12, 16, 17, 18}
Splitting t3 into {1, 2, 3} and {8, 9, 4}
Splitting t3 into {1} and {2, 3}
Splitting t5 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t5 into {0} and {1, 2}
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t3 same-day t5
domain, t3 thu
domain, t1 ends-by fri 10am 8
domain, t2 ends-by mon 11am 18
domain, t3 ends-by thu 3pm 11
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 3pm 6
Nodes expanded to reach solution: 161
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t3 same-day t5
domain, t3 thu
domain, t1 ends-by fri 10am 8
domain, t2 ends-by mon 11am 18
domain, t3 ends-by thu 3pm 11
```

```
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 3pm 6
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t3 same-day t5
domain, t3 thu
domain, t1 ends-by fri 10am 8
domain, t2 ends-by mon 11am 18
domain, t3 ends-by thu 3pm 11
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 3pm 6
Nodes expanded to reach solution: 5
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t3 same-day t5
domain, t3 thu
domain, t1 ends-by fri 10am 8
domain, t2 ends-by mon 11am 18
domain, t3 ends-by thu 3pm 11
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 3pm 6
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t3 same-day t5
domain, t3 thu
domain, t1 ends-by fri 10am 8
domain, t2 ends-by mon 11am 18
domain, t3 ends-by thu 3pm 11
domain, t4 ends-by tue 11am 17
domain, t5 ends-by tue 3pm 6
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {24, 25} and {26, 27, 28}
Splitting t2 into {24} and {25}
Splitting t3 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t3 into {24} and {25, 26}
Splitting t4 into {32, 33, 34, 35} and {36, 37, 27, 28, 29}
Splitting t4 into {36, 37} and {27, 28, 29}
Splitting t4 into {27} and {28, 29}
Splitting t5 into {24, 25} and {26, 27, 28}
Splitting t5 into {24} and {25}
task, t1 2
```

```
task, t2 4
task, t3 2
task, t4 1
task, t5 2
constraint, t2 before t3
constraint, t3 same-day t4
domain, t1 mon
domain, t4 mon
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by mon 3pm 6
Nodes expanded to reach solution: 9
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
constraint, t2 before t3
constraint, t3 same-day t4
domain, t1 mon
domain, t4 mon
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by mon 3pm 6
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
constraint, t2 before t3
constraint, t3 same-day t4
domain, t1 mon
domain, t4 mon
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by mon 3pm 6
Nodes expanded to reach solution: 9
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
constraint, t2 before t3
constraint, t3 same-day t4
domain, t1 mon
domain, t4 mon
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by mon 3pm 6
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
constraint, t2 before t3
constraint, t3 same-day t4
domain, t1 mon
domain, t4 mon
domain, t1 ends-by thu 12pm 11
domain, t3 ends-by mon 3pm 6
Splitting t1 into {0, 1, 2} and {3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0} and {1}
Splitting t3 into {4} and {5}
```

```
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 4
constraint, t2 after t5
constraint, t3 after t4
constraint, t4 before t5
domain, t2 thu
domain, t2 ends-by thu 9am 6
domain, t3 ends-by thu 9am 17
Nodes expanded to reach solution: 86
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 4
constraint, t2 after t5
constraint, t3 after t4
constraint, t4 before t5
domain, t2 thu
domain, t2 ends-by thu 9am 6
domain, t3 ends-by thu 9am 17
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 4
constraint, t2 after t5
constraint, t3 after t4
constraint, t4 before t5
domain, t2 thu
domain, t2 ends-by thu 9am 6
domain, t3 ends-by thu 9am 17
Nodes expanded to reach solution: 8
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 4
constraint, t2 after t5
constraint, t3 after t4
constraint, t4 before t5
domain, t2 thu
domain, t2 ends-by thu 9am 6
domain, t3 ends-by thu 9am 17
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 4
constraint, t2 after t5
constraint, t3 after t4
```

constraint, t4 before t5
domain, t2 thu
domain, t2 ends-by thu 9am 6
domain, t3 ends-by thu 9am 17
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35, 36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {24, 25, 26} and {27, 28, 29}
Splitting t2 into {24} and {25, 26}
Splitting t3 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t3 into {32, 33} and {34, 3}
Splitting t3 into {34} and {3}
Splitting t5 into {8, 9, 10, 3} and {11, 16, 17, 18, 19}
Splitting t5 into {8, 9} and {10, 3}
Splitting t5 into {8} and {9}
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t5
domain, t1 ends-by thu 10am 10
domain, t2 ends-by mon 9am 19
domain, t3 ends-by mon 11am 19
domain, t5 ends-by wed 10am 16
Nodes expanded to reach solution: 1065
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t5
domain, t1 ends-by thu 10am 10
domain, t2 ends-by mon 9am 19
domain, t3 ends-by mon 11am 19
domain, t5 ends-by wed 10am 16
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t5
domain, t1 ends-by thu 10am 10
domain, t2 ends-by mon 9am 19
domain, t3 ends-by mon 11am 19
domain, t5 ends-by wed 10am 16
Nodes expanded to reach solution: 5

```
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t5
domain, t1 ends-by thu 10am 10
domain, t2 ends-by mon 9am 19
domain, t3 ends-by mon 11am 19
domain, t5 ends-by wed 10am 16
task, t1 4
task, t2 4
task, t3 2
task, t4 3
task, t5 4
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 same-day t5
domain, t1 ends-by thu 10am 10
domain, t2 ends-by mon 9am 19
domain, t3 ends-by mon 11am 19
domain, t5 ends-by wed 10am 16
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t2 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t3 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t3 into {8, 9, 10} and {11, 12, 13}
Splitting t3 into {8} and {9, 10}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {8, 9} and {10, 11}
Splitting t5 into {8} and {9}
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t2
constraint, t4 after t5
domain, t2 fri
domain, t3 thu
domain, t1 ends-by fri 1pm 6
domain, t2 ends-by tue 2pm 15
domain, t4 ends-by mon 10am 7
domain, t5 ends-by fri 2pm 11
```

```
Nodes expanded to reach solution: 179
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t2
constraint, t4 after t5
domain, t2 fri
domain, t3 thu
domain, t1 ends-by fri 1pm 6
domain, t2 ends-by tue 2pm 15
domain, t4 ends-by mon 10am 7
domain, t5 ends-by fri 2pm 11
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t2
constraint, t4 after t5
domain, t2 fri
domain, t3 thu
domain, t1 ends-by fri 1pm 6
domain, t2 ends-by tue 2pm 15
domain, t4 ends-by mon 10am 7
domain, t5 ends-by fri 2pm 11
Nodes expanded to reach solution: 8
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t2
constraint, t4 after t5
domain, t2 fri
domain, t3 thu
domain, t1 ends-by fri 1pm 6
domain, t2 ends-by tue 2pm 15
domain, t4 ends-by mon 10am 7
domain, t5 ends-by fri 2pm 11
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t2
constraint, t4 after t5
domain, t2 fri
domain, t3 thu
domain, t1 ends-by fri 1pm 6
domain, t2 ends-by tue 2pm 15
domain, t4 ends-by mon 10am 7
domain, t5 ends-by fri 2pm 11
Splitting t1 into {32, 33} and {34, 35}
Splitting t1 into {32} and {33}
Splitting t2 into {32, 33} and {34, 35, 36}
Splitting t2 into {32} and {33}
Splitting t3 into {24, 25} and {26, 27}
Splitting t3 into {24} and {25}
```

```
Splitting t4 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t4 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t4 into {32, 33} and {34, 3}
Splitting t4 into {34} and {3}
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 2
constraint, t1 after t3
constraint, t3 after t5
domain, t2 tue
domain, t1 ends-by mon 2pm 18
domain, t2 ends-by fri 1pm 16
domain, t3 ends-by mon 1pm 19
domain, t5 ends-by mon 2pm 13
Nodes expanded to reach solution: 13725
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 2
constraint, t1 after t3
constraint, t3 after t5
domain, t2 tue
domain, t1 ends-by mon 2pm 18
domain, t2 ends-by fri 1pm 16
domain, t3 ends-by mon 1pm 19
domain, t5 ends-by mon 2pm 13
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 2
constraint, t1 after t3
constraint, t3 after t5
domain, t2 tue
domain, t1 ends-by mon 2pm 18
domain, t2 ends-by fri 1pm 16
domain, t3 ends-by mon 1pm 19
domain, t5 ends-by mon 2pm 13
Nodes expanded to reach solution: 13
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 2
constraint, t1 after t3
constraint, t3 after t5
domain, t2 tue
domain, t1 ends-by mon 2pm 18
domain, t2 ends-by fri 1pm 16
domain, t3 ends-by mon 1pm 19
domain, t5 ends-by mon 2pm 13
task, t1 2
task, t2 3
task, t3 1
task, t4 3
task, t5 2
```

```
constraint, t1 after t3
constraint, t3 after t5
domain, t2 tue
domain, t1 ends-by mon 2pm 18
domain, t2 ends-by fri 1pm 16
domain, t3 ends-by mon 1pm 19
domain, t5 ends-by mon 2pm 13
Splitting t1 into {3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33, 3
4, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t1 into {3, 4, 5} and {8, 9, 10}
Splitting t1 into {3} and {4, 5}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 3
constraint, t2 after t3
domain, t4 fri
domain, t1 ends-by tue 4pm 12
domain, t2 ends-by tue 9am 16
domain, t4 ends-by wed 3pm 9
Nodes expanded to reach solution: 41
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 3
constraint, t2 after t3
domain, t4 fri
domain, t1 ends-by tue 4pm 12
domain, t2 ends-by tue 9am 16
domain, t4 ends-by wed 3pm 9
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 3
constraint, t2 after t3
domain, t4 fri
domain, t1 ends-by tue 4pm 12
domain, t2 ends-by tue 9am 16
domain, t4 ends-by wed 3pm 9
Nodes expanded to reach solution: 6
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 3
constraint, t2 after t3
domain, t4 fri
domain, t1 ends-by tue 4pm 12
domain, t2 ends-by tue 9am 16
```

```
domain, t4 ends-by wed 3pm 9
task, t1 4
task, t2 4
task, t3 1
task, t4 3
task, t5 3
constraint, t2 after t3
domain, t4 fri
domain, t1 ends-by tue 4pm 12
domain, t2 ends-by tue 9am 16
domain, t4 ends-by wed 3pm 9
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t2 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t2 into {8, 1} and {2, 3}
Splitting t2 into {8} and {1}
Splitting t4 into {32, 33} and {34, 35, 36}
Splitting t4 into {32} and {33}
Splitting t5 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t5 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t5 into {0, 1, 2} and {8, 3, 4}
Splitting t5 into {0} and {1, 2}
task, t1 4
task, t2 2
task, t3 2
task, t4 3
task, t5 1
constraint, t1 after t3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 same-day t4
constraint, t2 before t5
constraint, t4 after t5
domain, t4 fri
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by fri 4pm 9
domain, t3 ends-by tue 9am 5
domain, t4 ends-by wed 10am 13
task, t1 4
task, t2 2
task, t3 2
task, t4 3
task, t5 1
constraint, t1 after t3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 same-day t4
constraint, t2 before t5
constraint, t4 after t5
domain, t4 fri
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by fri 4pm 9
domain, t3 ends-by tue 9am 5
domain, t4 ends-by wed 10am 13
```

```
task, t1 4
task, t2 2
task, t3 2
task, t4 3
task, t5 1
constraint, t1 after t3
constraint, t1 before t4
constraint, t2 before t3
constraint, t2 same-day t4
constraint, t2 before t5
constraint, t4 after t5
domain, t4 fri
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by fri 4pm 9
domain, t3 ends-by tue 9am 5
domain, t4 ends-by wed 10am 13
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 before t3
constraint, t2 starts-at t5
constraint, t2 same-day t6
constraint, t3 after t4
domain, t2 ends-by fri 1pm 6
domain, t3 ends-by tue 11am 8
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by mon 11am 15
domain, t6 ends-by thu 3pm 8
Nodes expanded to reach solution: 12206
task, t1 4
task, t2 3
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 before t3
constraint, t2 starts-at t5
constraint, t2 same-day t6
constraint, t3 after t4
domain, t2 ends-by fri 1pm 6
domain, t3 ends-by tue 11am 8
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by mon 11am 15
domain, t6 ends-by thu 3pm 8
task, t1 4
task, t2 3
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 before t3
constraint, t2 starts-at t5
constraint, t2 same-day t6
constraint, t3 after t4
domain, t2 ends-by fri 1pm 6
domain, t3 ends-by tue 11am 8
```

```
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by mon 11am 15
domain, t6 ends-by thu 3pm 8
Nodes expanded to reach solution: 7
task, t1 4
task, t2 3
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 before t3
constraint, t2 starts-at t5
constraint, t2 same-day t6
constraint, t3 after t4
domain, t2 ends-by fri 1pm 6
domain, t3 ends-by tue 11am 8
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by mon 11am 15
domain, t6 ends-by thu 3pm 8
task, t1 4
task, t2 3
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 before t3
constraint, t2 starts-at t5
constraint, t2 same-day t6
constraint, t3 after t4
domain, t2 ends-by fri 1pm 6
domain, t3 ends-by tue 11am 8
domain, t4 ends-by mon 1pm 14
domain, t5 ends-by mon 11am 15
domain, t6 ends-by thu 3pm 8
Splitting t1 into {0, 1, 2, 3, 32, 33, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {0, 1, 2, 3} and {32, 33, 8, 9, 10}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {1, 2, 3, 4, 9, 10, 11, 12, 17, 18} and {33, 34, 35, 36, 19, 2
0, 25, 26, 27, 28}
Splitting t2 into {1, 2, 3, 4, 9} and {10, 11, 12, 17, 18}
Splitting t2 into {1, 2} and {9, 3, 4}
Splitting t2 into {1} and {2}
Splitting t3 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t3 into {8, 4, 5} and {9, 10, 11}
Splitting t3 into {8} and {4, 5}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 3
task, t2 3
task, t3 2
task, t4 3
task, t5 2
task, t6 4
constraint, t1 before t4
```

```
constraint, t1 same-day t6
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 before t5
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by mon 3pm 13
domain, t3 ends-by mon 1pm 12
domain, t4 ends-by fri 2pm 16
domain, t5 ends-by fri 4pm 8
domain, t6 ends-by tue 3pm 12
task, t1 3
task, t2 3
task, t3 2
task, t4 3
task, t5 2
task, t6 4
constraint, t1 before t4
constraint, t1 same-day t6
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 before t5
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by mon 3pm 13
domain, t3 ends-by mon 1pm 12
domain, t4 ends-by fri 2pm 16
domain, t5 ends-by fri 4pm 8
domain, t6 ends-by tue 3pm 12
task, t1 3
task, t2 3
task, t3 2
task, t4 3
task, t5 2
task, t6 4
constraint, t1 before t4
constraint, t1 same-day t6
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 before t5
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by mon 3pm 13
domain, t3 ends-by mon 1pm 12
domain, t4 ends-by fri 2pm 16
domain, t5 ends-by fri 4pm 8
domain, t6 ends-by tue 3pm 12
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
... t3 in {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} has no solution
... t3 in {32, 33, 34, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29} has no solutio
n
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 2
task, t6 2
constraint, t3 same-day t5
domain, t4 mon
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by thu 12pm 15
```

```
domain, t3 ends-by fri 3pm 8
domain, t5 ends-by fri 2pm 18
domain, t6 ends-by wed 2pm 20
Nodes expanded to reach solution: 6
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 2
task, t6 2
constraint, t3 same-day t5
domain, t4 mon
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by fri 3pm 8
domain, t5 ends-by fri 2pm 18
domain, t6 ends-by wed 2pm 20
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 2
task, t6 2
constraint, t3 same-day t5
domain, t4 mon
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by fri 3pm 8
domain, t5 ends-by fri 2pm 18
domain, t6 ends-by wed 2pm 20
Nodes expanded to reach solution: 6
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 2
task, t6 2
constraint, t3 same-day t5
domain, t4 mon
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by fri 3pm 8
domain, t5 ends-by fri 2pm 18
domain, t6 ends-by wed 2pm 20
task, t1 4
task, t2 3
task, t3 2
task, t4 1
task, t5 2
task, t6 2
constraint, t3 same-day t5
domain, t4 mon
domain, t1 ends-by mon 3pm 12
domain, t2 ends-by thu 12pm 15
domain, t3 ends-by fri 3pm 8
domain, t5 ends-by fri 2pm 18
domain, t6 ends-by wed 2pm 20
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
```

```
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t2 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t6 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t6 into {0} and {1, 2}
task, t1 1
task, t2 4
task, t3 4
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t2 before t6
constraint, t4 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t3 tue
domain, t4 tue
domain, t1 ends-by wed 12pm 9
domain, t3 ends-by mon 11am 5
domain, t4 ends-by mon 10am 5
domain, t5 ends-by wed 12pm 17
domain, t6 ends-by thu 10am 6
Nodes expanded to reach solution: 1170
task, t1 1
task, t2 4
task, t3 4
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t2 before t6
constraint, t4 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t3 tue
domain, t4 tue
domain, t1 ends-by wed 12pm 9
```

```
domain, t3 ends-by mon 11am 5
domain, t4 ends-by mon 10am 5
domain, t5 ends-by wed 12pm 17
domain, t6 ends-by thu 10am 6
task, t1 1
task, t2 4
task, t3 4
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t2 before t6
constraint, t4 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t3 tue
domain, t4 tue
domain, t1 ends-by wed 12pm 9
domain, t3 ends-by mon 11am 5
domain, t4 ends-by mon 10am 5
domain, t5 ends-by wed 12pm 17
domain, t6 ends-by thu 10am 6
Nodes expanded to reach solution: 6
task, t1 1
task, t2 4
task, t3 4
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t2 before t6
constraint, t4 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t3 tue
domain, t4 tue
domain, t1 ends-by wed 12pm 9
domain, t3 ends-by mon 11am 5
domain, t4 ends-by mon 10am 5
domain, t5 ends-by wed 12pm 17
domain, t6 ends-by thu 10am 6
task, t1 1
task, t2 4
task, t3 4
task, t4 2
task, t5 4
task, t6 3
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t2 before t6
constraint, t4 after t5
constraint, t4 before t6
```

constraint, t5 before t6
domain, t3 tue
domain, t4 tue
domain, t1 ends-by wed 12pm 9
domain, t3 ends-by mon 11am 5
domain, t4 ends-by mon 10am 5
domain, t5 ends-by wed 12pm 17
domain, t6 ends-by thu 10am 6
Splitting t1 into {12} and {13, 14}
Splitting t2 into {8, 9} and {10, 11}
Splitting t2 into {8} and {9}
Splitting t4 into {8, 9, 10} and {11, 12, 13}
Splitting t4 into {8} and {9, 10}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {32, 33, 34, 35, 36, 12, 16, 17} and {18, 19, 20, 24, 25, 26, 2
7, 28}
Splitting t6 into {32, 33, 34, 35} and {16, 17, 36, 12}
Splitting t6 into {16, 17} and {36, 12}
Splitting t6 into {16} and {17}
task, t1 4
task, t2 3
task, t3 1
task, t4 3
task, t5 1
task, t6 4
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 after t6
constraint, t5 same-day t6
domain, t5 thu
domain, t6 wed
domain, t1 ends-by fri 11am 7
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by fri 11am 15
domain, t5 ends-by tue 9am 20
domain, t6 ends-by mon 4pm 19
task, t1 4
task, t2 3
task, t3 1
task, t4 3
task, t5 1
task, t6 4
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 after t6
constraint, t5 same-day t6
domain, t5 thu
domain, t6 wed
domain, t1 ends-by fri 11am 7
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by fri 11am 15
domain, t5 ends-by tue 9am 20
domain, t6 ends-by mon 4pm 19
task, t1 4
task, t2 3
task, t3 1
task, t4 3
task, t5 1
task, t6 4

constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 after t6
constraint, t5 same-day t6
domain, t5 thu
domain, t6 wed
domain, t1 ends-by fri 11am 7
domain, t2 ends-by fri 3pm 13
domain, t3 ends-by fri 11am 15
domain, t5 ends-by tue 9am 20
domain, t6 ends-by mon 4pm 19
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 24, 25, 26, 27}
... t1 in {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} has no solution
... t1 in {32, 33, 34, 35, 18, 19, 24, 25, 26, 27} has no solution
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 3
task, t4 2
task, t5 3
task, t6 1
constraint, t1 before t2
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 before t5
constraint, t5 after t6
domain, t3 wed
domain, t4 mon
domain, t5 fri
domain, t1 ends-by mon 9am 8
domain, t2 ends-by wed 4pm 20
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 10am 18
domain, t5 ends-by wed 9am 9
task, t1 1
task, t2 2
task, t3 3
task, t4 2
task, t5 3
task, t6 1
constraint, t1 before t2
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 before t5
constraint, t5 after t6
domain, t3 wed
domain, t4 mon
domain, t5 fri
domain, t1 ends-by mon 9am 8
domain, t2 ends-by wed 4pm 20
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 10am 18
domain, t5 ends-by wed 9am 9
task, t1 1
task, t2 2

```
task, t3 3
task, t4 2
task, t5 3
task, t6 1
constraint, t1 before t2
constraint, t1 before t4
constraint, t1 same-day t5
constraint, t2 same-day t5
constraint, t3 before t4
constraint, t3 before t5
constraint, t5 after t6
domain, t3 wed
domain, t4 mon
domain, t5 fri
domain, t1 ends-by mon 9am 8
domain, t2 ends-by wed 4pm 20
domain, t3 ends-by thu 2pm 17
domain, t4 ends-by tue 10am 18
domain, t5 ends-by wed 9am 9
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
task, t3 2
task, t4 4
task, t5 2
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t3 before t6
domain, t1 mon
domain, t5 fri
domain, t1 ends-by mon 11am 14
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 12pm 15
domain, t5 ends-by mon 9am 9
Nodes expanded to reach solution: 9
task, t1 4
task, t2 1
task, t3 2
task, t4 4
task, t5 2
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t3 before t6
domain, t1 mon
domain, t5 fri
domain, t1 ends-by mon 11am 14
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 12pm 15
domain, t5 ends-by mon 9am 9
task, t1 4
task, t2 1
task, t3 2
task, t4 4
task, t5 2
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t3 before t6
```

```
domain, t1 mon
domain, t5 fri
domain, t1 ends-by mon 11am 14
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 12pm 15
domain, t5 ends-by mon 9am 9
Nodes expanded to reach solution: 7
task, t1 4
task, t2 1
task, t3 2
task, t4 4
task, t5 2
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t3 before t6
domain, t1 mon
domain, t5 fri
domain, t1 ends-by mon 11am 14
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 12pm 15
domain, t5 ends-by mon 9am 9
task, t1 4
task, t2 1
task, t3 2
task, t4 4
task, t5 2
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t3 before t6
domain, t1 mon
domain, t5 fri
domain, t1 ends-by mon 11am 14
domain, t2 ends-by tue 3pm 14
domain, t3 ends-by tue 12pm 15
domain, t5 ends-by mon 9am 9
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16} and {32, 3
3, 34, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t2 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t3 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t4 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t4 into {8, 1} and {2, 3}
Splitting t4 into {8} and {1}
Splitting t5 into {32, 33, 34} and {35, 36, 37}
Splitting t5 into {32} and {33, 34}
Splitting t6 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t6 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t6 into {2, 3, 4} and {8, 9, 10, 5}
```

```
Splitting t6 into {2} and {3, 4}
task, t1 2
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 before t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t1 ends-by fri 1pm 9
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by wed 12pm 5
domain, t5 ends-by tue 9am 10
domain, t6 ends-by wed 11am 6
Nodes expanded to reach solution: 20217140
task, t1 2
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 before t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t1 ends-by fri 1pm 9
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by wed 12pm 5
domain, t5 ends-by tue 9am 10
domain, t6 ends-by wed 11am 6
task, t1 2
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 before t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t1 ends-by fri 1pm 9
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by wed 12pm 5
domain, t5 ends-by tue 9am 10
domain, t6 ends-by wed 11am 6
Nodes expanded to reach solution: 10
task, t1 2
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 before t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t1 ends-by fri 1pm 9
domain, t2 ends-by tue 4pm 5
```

```
domain, t3 ends-by wed 12pm 5
domain, t5 ends-by tue 9am 10
domain, t6 ends-by wed 11am 6
task, t1 2
task, t2 1
task, t3 3
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t6
constraint, t2 before t6
constraint, t4 after t5
constraint, t5 same-day t6
domain, t1 ends-by fri 1pm 9
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by wed 12pm 5
domain, t5 ends-by tue 9am 10
domain, t6 ends-by wed 11am 6
Splitting t1 into {5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 34,
35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {5, 8, 9, 10, 11, 12} and {13, 16, 17, 18, 19, 20}
Splitting t1 into {8, 9, 5} and {10, 11, 12}
Splitting t1 into {8} and {9, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t4 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t4 into {32, 33} and {34, 3}
Splitting t4 into {32} and {33}
Splitting t5 into {0, 1} and {2, 3, 4}
Splitting t5 into {0} and {1}
Splitting t6 into {1} and {2, 3}
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 same-day t3
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t2 same-day t6
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t3 wed
domain, t4 mon
domain, t6 tue
domain, t1 ends-by tue 12pm 10
domain, t2 ends-by wed 11am 13
domain, t3 ends-by thu 4pm 13
domain, t4 ends-by mon 11am 20
domain, t6 ends-by tue 12pm 12
task, t1 2
task, t2 3
task, t3 1
```

```
task, t4 2
task, t5 4
task, t6 2
constraint, t1 same-day t3
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t2 same-day t6
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t3 wed
domain, t4 mon
domain, t6 tue
domain, t1 ends-by tue 12pm 10
domain, t2 ends-by wed 11am 13
domain, t3 ends-by thu 4pm 13
domain, t4 ends-by mon 11am 20
domain, t6 ends-by tue 12pm 12
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 same-day t3
constraint, t2 same-day t3
constraint, t2 same-day t4
constraint, t2 same-day t6
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t3 wed
domain, t4 mon
domain, t6 tue
domain, t1 ends-by tue 12pm 10
domain, t2 ends-by wed 11am 13
domain, t3 ends-by thu 4pm 13
domain, t4 ends-by mon 11am 20
domain, t6 ends-by tue 12pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t2
constraint, t2 starts-at t6
domain, t1 ends-by mon 10am 20
domain, t2 ends-by mon 10am 15
domain, t3 ends-by mon 4pm 12
domain, t4 ends-by thu 12pm 8
domain, t5 ends-by wed 9am 6
domain, t6 ends-by wed 1pm 17
Nodes expanded to reach solution: 4099845
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t2
```

```
constraint, t2 starts-at t6
domain, t1 ends-by mon 10am 20
domain, t2 ends-by mon 10am 15
domain, t3 ends-by mon 4pm 12
domain, t4 ends-by thu 12pm 8
domain, t5 ends-by wed 9am 6
domain, t6 ends-by wed 1pm 17
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t2
constraint, t2 starts-at t6
domain, t1 ends-by mon 10am 20
domain, t2 ends-by mon 10am 15
domain, t3 ends-by mon 4pm 12
domain, t4 ends-by thu 12pm 8
domain, t5 ends-by wed 9am 6
domain, t6 ends-by wed 1pm 17
Nodes expanded to reach solution: 9
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t2
constraint, t2 starts-at t6
domain, t1 ends-by mon 10am 20
domain, t2 ends-by mon 10am 15
domain, t3 ends-by mon 4pm 12
domain, t4 ends-by thu 12pm 8
domain, t5 ends-by wed 9am 6
domain, t6 ends-by wed 1pm 17
task, t1 1
task, t2 3
task, t3 4
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t2
constraint, t2 starts-at t6
domain, t1 ends-by mon 10am 20
domain, t2 ends-by mon 10am 15
domain, t3 ends-by mon 4pm 12
domain, t4 ends-by thu 12pm 8
domain, t5 ends-by wed 9am 6
domain, t6 ends-by wed 1pm 17
Splitting t1 into {6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21} and {32,
33, 34, 35, 36, 37, 38, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {6, 8, 9, 10, 11, 12, 13} and {14, 16, 17, 18, 19, 20, 21}
Splitting t1 into {8, 9, 6} and {10, 11, 12, 13}
Splitting t1 into {8} and {9, 6}
Splitting t1 into {9} and {6}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
```

```
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t4 into {0, 1, 2} and {8, 3, 4}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
task, t1 3
task, t2 2
task, t3 2
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t3
constraint, t4 before t5
domain, t1 ends-by mon 2pm 20
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by mon 4pm 17
domain, t5 ends-by mon 11am 15
domain, t6 ends-by wed 3pm 13
Nodes expanded to reach solution: 8
task, t1 3
task, t2 2
task, t3 2
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t3
constraint, t4 before t5
domain, t1 ends-by mon 2pm 20
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by mon 4pm 17
domain, t5 ends-by mon 11am 15
domain, t6 ends-by wed 3pm 13
task, t1 3
task, t2 2
task, t3 2
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t3
constraint, t4 before t5
domain, t1 ends-by mon 2pm 20
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by mon 4pm 17
domain, t5 ends-by mon 11am 15
domain, t6 ends-by wed 3pm 13
Nodes expanded to reach solution: 8
task, t1 3
task, t2 2
task, t3 2
```

```
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t3
constraint, t4 before t5
domain, t1 ends-by mon 2pm 20
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by mon 4pm 17
domain, t5 ends-by mon 11am 15
domain, t6 ends-by wed 3pm 13
task, t1 3
task, t2 2
task, t3 2
task, t4 2
task, t5 4
task, t6 3
constraint, t1 same-day t3
constraint, t4 before t5
domain, t1 ends-by mon 2pm 20
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by mon 4pm 17
domain, t5 ends-by mon 11am 15
domain, t6 ends-by wed 3pm 13
Splitting t1 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t1 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2} and {3, 4, 5}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 17, 1
8, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
Splitting t5 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t5 into {32, 33} and {2, 3}
Splitting t5 into {2} and {3}
Splitting t6 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t6 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t6 into {0, 1, 2} and {8, 3, 4}
Splitting t6 into {0} and {1, 2}
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 2
task, t6 2
constraint, t1 same-day t3
constraint, t1 after t6
```

```
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 starts-at t5
constraint, t3 before t6
constraint, t4 same-day t5
domain, t2 ends-by fri 12pm 7
domain, t5 ends-by mon 4pm 7
domain, t6 ends-by mon 11am 13
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 2
task, t6 2
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 starts-at t5
constraint, t3 before t6
constraint, t4 same-day t5
domain, t2 ends-by fri 12pm 7
domain, t5 ends-by mon 4pm 7
domain, t6 ends-by mon 11am 13
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 2
task, t6 2
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 starts-at t5
constraint, t3 before t6
constraint, t4 same-day t5
domain, t2 ends-by fri 12pm 7
domain, t5 ends-by mon 4pm 7
domain, t6 ends-by mon 11am 13
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by mon 1pm 7
domain, t2 ends-by thu 1pm 19
domain, t4 ends-by thu 9am 15
domain, t5 ends-by thu 3pm 13
domain, t6 ends-by fri 11am 8
Nodes expanded to reach solution: 418
task, t1 1
task, t2 2
task, t3 4
```

```
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by mon 1pm 7
domain, t2 ends-by thu 1pm 19
domain, t4 ends-by thu 9am 15
domain, t5 ends-by thu 3pm 13
domain, t6 ends-by fri 11am 8
task, t1 1
task, t2 2
task, t3 4
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by mon 1pm 7
domain, t2 ends-by thu 1pm 19
domain, t4 ends-by thu 9am 15
domain, t5 ends-by thu 3pm 13
domain, t6 ends-by fri 11am 8
Nodes expanded to reach solution: 6
task, t1 1
task, t2 2
task, t3 4
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by mon 1pm 7
domain, t2 ends-by thu 1pm 19
domain, t4 ends-by thu 9am 15
domain, t5 ends-by thu 3pm 13
domain, t6 ends-by fri 11am 8
task, t1 1
task, t2 2
task, t3 4
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 after t6
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by mon 1pm 7
domain, t2 ends-by thu 1pm 19
domain, t4 ends-by thu 9am 15
domain, t5 ends-by thu 3pm 13
domain, t6 ends-by fri 11am 8
Splitting t1 into {16, 17, 18} and {19, 20, 21, 22}
Splitting t1 into {16} and {17, 18}
```

```
Splitting t2 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20} and {32, 33, 3
4, 35, 36, 37, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {4, 5, 8, 9, 10, 11} and {12, 13, 16, 17, 18, 19, 20}
Splitting t2 into {8, 4, 5} and {9, 10, 11}
Splitting t2 into {8} and {4, 5}
Splitting t3 into {16, 17} and {18, 19}
Splitting t3 into {16} and {17}
Splitting t4 into {0, 1} and {2, 3}
Splitting t4 into {0} and {1}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t5 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t5 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t6 into {0, 1} and {2, 3}
Splitting t6 into {0} and {1}
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t4
constraint, t3 same-day t5
constraint, t4 same-day t6
domain, t2 fri
domain, t1 ends-by tue 3pm 18
domain, t3 ends-by wed 4pm 11
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by tue 4pm 8
domain, t6 ends-by mon 12pm 5
Nodes expanded to reach solution: 6
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t4
constraint, t3 same-day t5
constraint, t4 same-day t6
domain, t2 fri
domain, t1 ends-by tue 3pm 18
domain, t3 ends-by wed 4pm 11
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by tue 4pm 8
domain, t6 ends-by mon 12pm 5
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t4
constraint, t3 same-day t5
constraint, t4 same-day t6
domain, t2 fri
domain, t1 ends-by tue 3pm 18
domain, t3 ends-by wed 4pm 11
```

```
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by tue 4pm 8
domain, t6 ends-by mon 12pm 5
Nodes expanded to reach solution: 6
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t4
constraint, t3 same-day t5
constraint, t4 same-day t6
domain, t2 fri
domain, t1 ends-by tue 3pm 18
domain, t3 ends-by wed 4pm 11
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by tue 4pm 8
domain, t6 ends-by mon 12pm 5
task, t1 2
task, t2 2
task, t3 3
task, t4 2
task, t5 2
task, t6 1
constraint, t2 after t4
constraint, t3 same-day t5
constraint, t4 same-day t6
domain, t2 fri
domain, t1 ends-by tue 3pm 18
domain, t3 ends-by wed 4pm 11
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by tue 4pm 8
domain, t6 ends-by mon 12pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {32, 33, 34} and {35, 36, 37}
Splitting t2 into {32} and {33, 34}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 2
0, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t5 into {0, 1, 2} and {3, 4, 5}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
```

```
task, t6 3
constraint, t1 after t4
domain, t5 tue
domain, t1 ends-by tue 10am 12
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by tue 12pm 18
domain, t5 ends-by fri 10am 12
domain, t6 ends-by fri 2pm 18
Nodes expanded to reach solution: 31269
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t1 after t4
domain, t5 tue
domain, t1 ends-by tue 10am 12
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by tue 12pm 18
domain, t5 ends-by fri 10am 12
domain, t6 ends-by fri 2pm 18
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t1 after t4
domain, t5 tue
domain, t1 ends-by tue 10am 12
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by tue 12pm 18
domain, t5 ends-by fri 10am 12
domain, t6 ends-by fri 2pm 18
Nodes expanded to reach solution: 9
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t1 after t4
domain, t5 tue
domain, t1 ends-by tue 10am 12
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by tue 12pm 18
domain, t5 ends-by fri 10am 12
domain, t6 ends-by fri 2pm 18
task, t1 4
task, t2 4
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t1 after t4
domain, t5 tue
domain, t1 ends-by tue 10am 12
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by tue 12pm 18
```

```
domain, t5 ends-by fri 10am 12
domain, t6 ends-by fri 2pm 18
Splitting t1 into {32, 33, 34, 3, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25,
26, 27}
Splitting t1 into {32, 33, 34, 3} and {8, 9, 10, 35}
Splitting t1 into {32, 33} and {34, 3}
Splitting t1 into {34} and {3}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t5 into {8, 9, 10} and {11, 12, 13}
Splitting t5 into {8} and {9, 10}
Splitting t6 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t6 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t6 into {0, 1, 2} and {8, 3, 4}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t2 after t6
constraint, t3 before t4
constraint, t4 before t5
constraint, t4 same-day t6
domain, t5 wed
domain, t1 ends-by mon 3pm 13
domain, t2 ends-by mon 1pm 12
domain, t3 ends-by mon 9am 6
domain, t4 ends-by fri 10am 18
domain, t5 ends-by mon 2pm 5
domain, t6 ends-by mon 9am 10
Nodes expanded to reach solution: 11933
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t2 after t6
constraint, t3 before t4
constraint, t4 before t5
constraint, t4 same-day t6
domain, t5 wed
domain, t1 ends-by mon 3pm 13
domain, t2 ends-by mon 1pm 12
domain, t3 ends-by mon 9am 6
```

```
domain, t4 ends-by fri 10am 18
domain, t5 ends-by mon 2pm 5
domain, t6 ends-by mon 9am 10
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t2 after t6
constraint, t3 before t4
constraint, t4 before t5
constraint, t4 same-day t6
domain, t5 wed
domain, t1 ends-by mon 3pm 13
domain, t2 ends-by mon 1pm 12
domain, t3 ends-by mon 9am 6
domain, t4 ends-by fri 10am 18
domain, t5 ends-by mon 2pm 5
domain, t6 ends-by mon 9am 10
Nodes expanded to reach solution: 16
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t2 after t6
constraint, t3 before t4
constraint, t4 before t5
constraint, t4 same-day t6
domain, t5 wed
domain, t1 ends-by mon 3pm 13
domain, t2 ends-by mon 1pm 12
domain, t3 ends-by mon 9am 6
domain, t4 ends-by fri 10am 18
domain, t5 ends-by mon 2pm 5
domain, t6 ends-by mon 9am 10
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t5
constraint, t2 before t4
constraint, t2 after t6
constraint, t3 before t4
constraint, t4 before t5
constraint, t4 same-day t6
domain, t5 wed
domain, t1 ends-by mon 3pm 13
domain, t2 ends-by mon 1pm 12
domain, t3 ends-by mon 9am 6
domain, t4 ends-by fri 10am 18
domain, t5 ends-by mon 2pm 5
```

```
domain, t6 ends-by mon 9am 10
Splitting t1 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t1 into {0, 1} and {2, 3, 4}
Splitting t1 into {0} and {1}
Splitting t2 into {2, 3, 4} and {8, 9, 10}
Splitting t3 into {0} and {1}
Splitting t5 into {16, 17} and {18, 19}
Splitting t5 into {16} and {17}
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t3
constraint, t1 before t4
domain, t1 ends-by thu 1pm 19
domain, t2 ends-by mon 4pm 9
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by tue 11am 9
Nodes expanded to reach solution: 2354
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t3
constraint, t1 before t4
domain, t1 ends-by thu 1pm 19
domain, t2 ends-by mon 4pm 9
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by tue 11am 9
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t3
constraint, t1 before t4
domain, t1 ends-by thu 1pm 19
domain, t2 ends-by mon 4pm 9
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by tue 11am 9
Nodes expanded to reach solution: 9
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t3
constraint, t1 before t4
domain, t1 ends-by thu 1pm 19
domain, t2 ends-by mon 4pm 9
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by tue 11am 9
task, t1 4
task, t2 2
```

```
task, t3 3
task, t4 3
task, t5 1
task, t6 3
constraint, t1 after t3
constraint, t1 before t4
domain, t1 ends-by thu 1pm 19
domain, t2 ends-by mon 4pm 9
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by tue 11am 9
Splitting t1 into {32, 3, 8, 9, 10, 11, 16} and {17, 18, 19, 24, 25, 26, 27}
Splitting t1 into {32, 8, 3} and {16, 9, 10, 11}
Splitting t1 into {32} and {8, 3}
Splitting t1 into {8} and {3}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t4 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t4 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t4 into {8, 9} and {10, 11, 12}
Splitting t4 into {8} and {9}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t5 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t5 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t5 into {0, 1} and {2, 3}
Splitting t5 into {0} and {1}
Splitting t6 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t6 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t6 into {0, 1, 2} and {8, 3, 4}
Splitting t6 into {0} and {1, 2}
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 2
task, t6 3
constraint, t2 after t6
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 ends-by fri 1pm 8
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by thu 10am 12
domain, t6 ends-by fri 10am 16
Nodes expanded to reach solution: 142271
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 2
task, t6 3
constraint, t2 after t6
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 ends-by fri 1pm 8
```

```
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by thu 10am 12
domain, t6 ends-by fri 10am 16
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 2
task, t6 3
constraint, t2 after t6
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 ends-by fri 1pm 8
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by thu 10am 12
domain, t6 ends-by fri 10am 16
Nodes expanded to reach solution: 11
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 2
task, t6 3
constraint, t2 after t6
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 ends-by fri 1pm 8
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by thu 10am 12
domain, t6 ends-by fri 10am 16
task, t1 4
task, t2 3
task, t3 3
task, t4 4
task, t5 2
task, t6 3
constraint, t2 after t6
constraint, t3 same-day t5
constraint, t4 after t5
domain, t2 ends-by fri 1pm 8
domain, t4 ends-by tue 2pm 16
domain, t5 ends-by thu 10am 12
domain, t6 ends-by fri 10am 16
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t2 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t2 into {3, 4} and {8, 9, 10}
Splitting t2 into {3} and {4}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}
Splitting t4 into {32, 33, 2, 3, 34, 35, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 2
5, 26, 27}
```

```
Splitting t4 into {32, 33, 2, 3} and {34, 35, 8, 9, 10}
Splitting t4 into {32, 33} and {2, 3}
Splitting t4 into {2} and {3}
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 4
task, t6 1
constraint, t2 before t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 same-day t5
constraint, t5 after t6
domain, t1 ends-by thu 4pm 16
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by thu 12pm 6
domain, t6 ends-by fri 1pm 13
Nodes expanded to reach solution: 1149
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 4
task, t6 1
constraint, t2 before t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 same-day t5
constraint, t5 after t6
domain, t1 ends-by thu 4pm 16
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by thu 12pm 6
domain, t6 ends-by fri 1pm 13
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 4
task, t6 1
constraint, t2 before t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 same-day t5
constraint, t5 after t6
domain, t1 ends-by thu 4pm 16
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by thu 12pm 6
domain, t6 ends-by fri 1pm 13
Nodes expanded to reach solution: 6
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 4
task, t6 1
constraint, t2 before t5
```

```
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 same-day t5
constraint, t5 after t6
domain, t1 ends-by thu 4pm 16
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by thu 12pm 6
domain, t6 ends-by fri 1pm 13
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 4
task, t6 1
constraint, t2 before t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 same-day t5
constraint, t5 after t6
domain, t1 ends-by thu 4pm 16
domain, t3 ends-by tue 12pm 17
domain, t4 ends-by wed 4pm 10
domain, t5 ends-by thu 12pm 6
domain, t6 ends-by fri 1pm 13
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t2 into {0, 1} and {2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {32, 33, 34, 35, 36, 12, 16, 17} and {18, 19, 20, 24, 25, 26, 2
7, 28}
Splitting t3 into {32, 33, 34, 35} and {16, 17, 36, 12}
... t3 in {32, 33, 34, 35} has no solution
Splitting t3 into {16, 17} and {36, 12}
... t3 in {16, 17} has no solution
Splitting t3 into {36} and {12}
Splitting t4 into {8, 9} and {10, 11, 12}
Splitting t4 into {8} and {9}
Splitting t6 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t6 into {0} and {1, 2}
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 3
task, t6 1
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 same-day t6
domain, t6 thu
domain, t1 ends-by wed 12pm 14
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by fri 9am 6
domain, t4 ends-by thu 4pm 10
```

```
domain, t5 ends-by mon 2pm 11
Nodes expanded to reach solution: 16405884
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 3
task, t6 1
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 same-day t6
domain, t6 thu
domain, t1 ends-by wed 12pm 14
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by fri 9am 6
domain, t4 ends-by thu 4pm 10
domain, t5 ends-by mon 2pm 11
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 3
task, t6 1
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 same-day t6
domain, t6 thu
domain, t1 ends-by wed 12pm 14
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by fri 9am 6
domain, t4 ends-by thu 4pm 10
domain, t5 ends-by mon 2pm 11
Nodes expanded to reach solution: 6
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 3
task, t6 1
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t5
constraint, t4 same-day t6
domain, t6 thu
domain, t1 ends-by wed 12pm 14
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by fri 9am 6
domain, t4 ends-by thu 4pm 10
domain, t5 ends-by mon 2pm 11
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 3
task, t6 1
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 before t5
```

```
constraint, t4 same-day t6
domain, t6 thu
domain, t1 ends-by wed 12pm 14
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by fri 9am 6
domain, t4 ends-by thu 4pm 10
domain, t5 ends-by mon 2pm 11
Splitting t1 into {24, 25} and {26, 27, 28}
Splitting t1 into {24} and {25}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16} and {32, 33, 34, 1
7, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5} and {8, 9, 10, 11, 12, 13, 16}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
Splitting t4 into {24, 25} and {26, 27}
Splitting t4 into {24} and {25}
Splitting t5 into {3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19} and {32, 33, 34, 35, 3
6, 20, 24, 25, 26, 27, 28}
Splitting t5 into {3, 4, 8, 9, 10} and {11, 12, 16, 17, 18, 19}
Splitting t5 into {3, 4} and {8, 9, 10}
Splitting t5 into {3} and {4}
Splitting t6 into {24, 25, 26} and {27, 28, 29, 30}
Splitting t6 into {24} and {25, 26}
task, t1 1
task, t2 4
task, t3 3
task, t4 4
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t4 same-day t5
constraint, t5 starts-at t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by mon 4pm 10
domain, t4 ends-by fri 12pm 17
domain, t5 ends-by wed 11am 18
domain, t6 ends-by wed 1pm 6
Nodes expanded to reach solution: 42152
task, t1 1
task, t2 4
task, t3 3
task, t4 4
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t4 same-day t5
constraint, t5 starts-at t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by mon 4pm 10
domain, t4 ends-by fri 12pm 17
domain, t5 ends-by wed 11am 18
domain, t6 ends-by wed 1pm 6
task, t1 1
```

task, t2 4
task, t3 3
task, t4 4
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t4 same-day t5
constraint, t5 starts-at t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by mon 4pm 10
domain, t4 ends-by fri 12pm 17
domain, t5 ends-by wed 11am 18
domain, t6 ends-by wed 1pm 6
Nodes expanded to reach solution: 8
task, t1 1
task, t2 4
task, t3 3
task, t4 4
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t4 same-day t5
constraint, t5 starts-at t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by mon 4pm 10
domain, t4 ends-by fri 12pm 17
domain, t5 ends-by wed 11am 18
domain, t6 ends-by wed 1pm 6
task, t1 1
task, t2 4
task, t3 3
task, t4 4
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t4 same-day t5
constraint, t5 starts-at t6
domain, t1 ends-by mon 4pm 6
domain, t2 ends-by mon 3pm 9
domain, t3 ends-by mon 4pm 10
domain, t4 ends-by fri 12pm 17
domain, t5 ends-by wed 11am 18
domain, t6 ends-by wed 1pm 6
Splitting t1 into {4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and {3
2, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t1 into {4, 5, 6} and {8, 9, 10, 11}
Splitting t1 into {4} and {5, 6}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t3 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t3 into {0, 1, 2} and {8, 3, 4}
Splitting t3 into {0} and {1, 2}

```
Splitting t5 into {2, 3} and {4, 5}
Splitting t5 into {2} and {3}
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 3
constraint, t1 same-day t2
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t4 before t5
domain, t1 ends-by fri 1pm 20
domain, t2 ends-by wed 10am 18
domain, t3 ends-by fri 2pm 18
domain, t5 ends-by wed 9am 5
domain, t6 ends-by fri 11am 13
Nodes expanded to reach solution: 45005
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 3
constraint, t1 same-day t2
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t4 before t5
domain, t1 ends-by fri 1pm 20
domain, t2 ends-by wed 10am 18
domain, t3 ends-by fri 2pm 18
domain, t5 ends-by wed 9am 5
domain, t6 ends-by fri 11am 13
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 3
constraint, t1 same-day t2
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t4 before t5
domain, t1 ends-by fri 1pm 20
domain, t2 ends-by wed 10am 18
domain, t3 ends-by fri 2pm 18
domain, t5 ends-by wed 9am 5
domain, t6 ends-by fri 11am 13
Nodes expanded to reach solution: 8
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 3
constraint, t1 same-day t2
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t4 before t5
domain, t1 ends-by fri 1pm 20
```

```
domain, t2 ends-by wed 10am 18
domain, t3 ends-by fri 2pm 18
domain, t5 ends-by wed 9am 5
domain, t6 ends-by fri 11am 13
task, t1 2
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 3
constraint, t1 same-day t2
constraint, t1 starts-at t5
constraint, t2 after t4
constraint, t4 before t5
domain, t1 ends-by fri 1pm 20
domain, t2 ends-by wed 10am 18
domain, t3 ends-by fri 2pm 18
domain, t5 ends-by wed 9am 5
domain, t6 ends-by fri 11am 13
Splitting t1 into {35, 36, 37, 5, 11, 12} and {13, 19, 20, 21, 27, 28, 29}
Splitting t1 into {35, 36, 37} and {11, 12, 5}
Splitting t1 into {11} and {12, 5}
Splitting t2 into {8, 9, 10} and {11, 12, 13}
Splitting t2 into {8} and {9, 10}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2} and {3, 4, 5}
Splitting t4 into {0} and {1, 2}
Splitting t6 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17} and {32, 33, 34, 35,
36, 18, 19, 20, 24, 25, 26, 27, 28}
Splitting t6 into {0, 1, 2, 3, 4, 8} and {9, 10, 11, 12, 16, 17}
Splitting t6 into {0, 1, 2} and {8, 3, 4}
Splitting t6 into {0} and {1, 2}
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
task, t6 1
constraint, t2 same-day t4
constraint, t3 before t4
constraint, t4 after t5
constraint, t4 before t6
domain, t1 ends-by wed 1pm 18
domain, t3 ends-by thu 10am 7
domain, t4 ends-by fri 1pm 5
domain, t6 ends-by tue 4pm 15
Nodes expanded to reach solution: 11
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
task, t6 1
constraint, t2 same-day t4
constraint, t3 before t4
constraint, t4 after t5
```

```
constraint, t4 before t6
domain, t1 ends-by wed 1pm 18
domain, t3 ends-by thu 10am 7
domain, t4 ends-by fri 1pm 5
domain, t6 ends-by tue 4pm 15
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
task, t6 1
constraint, t2 same-day t4
constraint, t3 before t4
constraint, t4 after t5
constraint, t4 before t6
domain, t1 ends-by wed 1pm 18
domain, t3 ends-by thu 10am 7
domain, t4 ends-by fri 1pm 5
domain, t6 ends-by tue 4pm 15
Nodes expanded to reach solution: 8
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
task, t6 1
constraint, t2 same-day t4
constraint, t3 before t4
constraint, t4 after t5
constraint, t4 before t6
domain, t1 ends-by wed 1pm 18
domain, t3 ends-by thu 10am 7
domain, t4 ends-by fri 1pm 5
domain, t6 ends-by tue 4pm 15
task, t1 2
task, t2 4
task, t3 2
task, t4 1
task, t5 2
task, t6 1
constraint, t2 same-day t4
constraint, t3 before t4
constraint, t4 after t5
constraint, t4 before t6
domain, t1 ends-by wed 1pm 18
domain, t3 ends-by thu 10am 7
domain, t4 ends-by fri 1pm 5
domain, t6 ends-by tue 4pm 15
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18} and {32, 3
3, 34, 35, 36, 37, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17, 18}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t2 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t2 into {0, 1} and {8, 2, 3}
Splitting t2 into {0} and {1}
Splitting t3 into {0, 1} and {2, 3, 4}
Splitting t3 into {0} and {1}
```

```
Splitting t4 into {2, 3} and {4, 5, 6}
Splitting t4 into {2} and {3}
Splitting t6 into {3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20} and
{32, 33, 34, 35, 36, 37, 38, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t6 into {3, 4, 5, 6, 8, 9, 10, 11} and {12, 13, 14, 16, 17, 18, 19, 20}
Splitting t6 into {3, 4, 5, 6} and {8, 9, 10, 11}
Splitting t6 into {3, 4} and {5, 6}
Splitting t6 into {3} and {4}
task, t1 2
task, t2 1
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t3
constraint, t2 same-day t4
constraint, t4 after t6
constraint, t5 before t6
domain, t4 fri
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by fri 4pm 17
domain, t4 ends-by fri 10am 20
domain, t5 ends-by mon 10am 19
domain, t6 ends-by fri 12pm 14
Nodes expanded to reach solution: 1214
task, t1 2
task, t2 1
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t3
constraint, t2 same-day t4
constraint, t4 after t6
constraint, t5 before t6
domain, t4 fri
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by fri 4pm 17
domain, t4 ends-by fri 10am 20
domain, t5 ends-by mon 10am 19
domain, t6 ends-by fri 12pm 14
task, t1 2
task, t2 1
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t3
constraint, t2 same-day t4
constraint, t4 after t6
constraint, t5 before t6
domain, t4 fri
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by fri 4pm 17
domain, t4 ends-by fri 10am 20
domain, t5 ends-by mon 10am 19
domain, t6 ends-by fri 12pm 14
```

```
Nodes expanded to reach solution: 7
task, t1 2
task, t2 1
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t3
constraint, t2 same-day t4
constraint, t4 after t6
constraint, t5 before t6
domain, t4 fri
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by fri 4pm 17
domain, t4 ends-by fri 10am 20
domain, t5 ends-by mon 10am 19
domain, t6 ends-by fri 12pm 14
task, t1 2
task, t2 1
task, t3 1
task, t4 2
task, t5 4
task, t6 2
constraint, t1 before t3
constraint, t2 starts-at t3
constraint, t2 same-day t4
constraint, t4 after t6
constraint, t5 before t6
domain, t4 fri
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by fri 4pm 17
domain, t4 ends-by fri 10am 20
domain, t5 ends-by mon 10am 19
domain, t6 ends-by fri 12pm 14
Splitting t1 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t1 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t1 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {33, 34, 35} and {36, 37, 38}
Splitting t2 into {33} and {34, 35}
Splitting t4 into {32, 33, 34} and {35, 36, 37}
Splitting t4 into {32} and {33, 34}
Splitting t5 into {0, 1, 2, 3, 8, 9, 10} and {11, 16, 17, 18, 19, 24, 25}
Splitting t5 into {0, 1, 2} and {8, 9, 10, 3}
Splitting t5 into {0} and {1, 2}
Splitting t6 into {4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {18, 19, 20, 21, 24, 2
5, 26, 27, 28, 29}
Splitting t6 into {4, 5, 8, 9, 10} and {11, 12, 13, 16, 17}
Splitting t6 into {4, 5} and {8, 9, 10}
Splitting t6 into {4} and {5}
task, t1 3
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 4
constraint, t1 same-day t6
constraint, t2 before t4
```

```
constraint, t3 before t6
constraint, t5 after t6
domain, t1 fri
domain, t2 ends-by tue 3pm 15
domain, t3 ends-by tue 11am 20
domain, t5 ends-by thu 10am 12
Nodes expanded to reach solution: 528
task, t1 3
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 4
constraint, t1 same-day t6
constraint, t2 before t4
constraint, t3 before t6
constraint, t5 after t6
domain, t1 fri
domain, t2 ends-by tue 3pm 15
domain, t3 ends-by tue 11am 20
domain, t5 ends-by thu 10am 12
task, t1 3
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 4
constraint, t1 same-day t6
constraint, t2 before t4
constraint, t3 before t6
constraint, t5 after t6
domain, t1 fri
domain, t2 ends-by tue 3pm 15
domain, t3 ends-by tue 11am 20
domain, t5 ends-by thu 10am 12
Nodes expanded to reach solution: 6
task, t1 3
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 4
constraint, t1 same-day t6
constraint, t2 before t4
constraint, t3 before t6
constraint, t5 after t6
domain, t1 fri
domain, t2 ends-by tue 3pm 15
domain, t3 ends-by tue 11am 20
domain, t5 ends-by thu 10am 12
task, t1 3
task, t2 2
task, t3 4
task, t4 2
task, t5 3
task, t6 4
constraint, t1 same-day t6
constraint, t2 before t4
constraint, t3 before t6
constraint, t5 after t6
```

```
domain, t1 fri
domain, t2 ends-by tue 3pm 15
domain, t3 ends-by tue 11am 20
domain, t5 ends-by thu 10am 12
Splitting t1 into {32, 33} and {34, 35, 36}
Splitting t1 into {32} and {33}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17} and {32, 33, 3
4, 35, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t2 into {0, 1, 2, 3, 4, 5, 8} and {9, 10, 11, 12, 13, 16, 17}
Splitting t2 into {0, 1, 2} and {8, 3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11} and {16, 17, 18, 19, 24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3} and {8, 9, 10, 11}
Splitting t3 into {0, 1} and {2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19} and {32, 33,
34, 35, 36, 37, 20, 21, 24, 25, 26, 27, 28, 29}
Splitting t4 into {2, 3, 4, 5, 8, 9, 10} and {11, 12, 13, 16, 17, 18, 19}
Splitting t4 into {2, 3, 4} and {8, 9, 10, 5}
Splitting t4 into {2} and {3, 4}
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
task, t6 1
constraint, t1 same-day t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 1pm 13
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 12pm 12
domain, t5 ends-by mon 2pm 13
domain, t6 ends-by thu 1pm 7
Nodes expanded to reach solution: 458
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
task, t6 1
constraint, t1 same-day t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 1pm 13
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 12pm 12
domain, t5 ends-by mon 2pm 13
domain, t6 ends-by thu 1pm 7
task, t1 1
```

```
task, t2 2
task, t3 4
task, t4 3
task, t5 2
task, t6 1
constraint, t1 same-day t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 1pm 13
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 12pm 12
domain, t5 ends-by mon 2pm 13
domain, t6 ends-by thu 1pm 7
Nodes expanded to reach solution: 14
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
task, t6 1
constraint, t1 same-day t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 1pm 13
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 12pm 12
domain, t5 ends-by mon 2pm 13
domain, t6 ends-by thu 1pm 7
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
task, t6 1
constraint, t1 same-day t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t2 before t6
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 1pm 13
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 12pm 12
domain, t5 ends-by mon 2pm 13
domain, t6 ends-by thu 1pm 7
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14} and {16, 17, 1
8, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6} and {8, 9, 10, 11, 12, 13, 14}
```

```
Splitting t1 into {0, 1, 2} and {3, 4, 5, 6}
Splitting t1 into {0} and {1, 2}
Splitting t2 into {3} and {4}
Splitting t5 into {8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21} and {32, 33, 34,
35, 36, 37, 24, 25, 26, 27, 28, 29}
Splitting t5 into {8, 9, 10, 11, 12, 13} and {16, 17, 18, 19, 20, 21}
Splitting t5 into {8, 9, 10} and {11, 12, 13}
Splitting t5 into {8} and {9, 10}
Splitting t6 into {5} and {6}
task, t1 1
task, t2 1
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t2 before t6
constraint, t3 after t4
domain, t3 fri
domain, t5 mon
domain, t1 ends-by fri 2pm 20
domain, t2 ends-by mon 2pm 12
domain, t3 ends-by tue 4pm 18
domain, t4 ends-by fri 12pm 11
domain, t5 ends-by mon 2pm 20
domain, t6 ends-by thu 1pm 5
Nodes expanded to reach solution: 8
task, t1 1
task, t2 1
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t2 before t6
constraint, t3 after t4
domain, t3 fri
domain, t5 mon
domain, t1 ends-by fri 2pm 20
domain, t2 ends-by mon 2pm 12
domain, t3 ends-by tue 4pm 18
domain, t4 ends-by fri 12pm 11
domain, t5 ends-by mon 2pm 20
domain, t6 ends-by thu 1pm 5
task, t1 1
task, t2 1
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t2 before t6
constraint, t3 after t4
domain, t3 fri
```

```
domain, t5 mon
domain, t1 ends-by fri 2pm 20
domain, t2 ends-by mon 2pm 12
domain, t3 ends-by tue 4pm 18
domain, t4 ends-by fri 12pm 11
domain, t5 ends-by mon 2pm 20
domain, t6 ends-by thu 1pm 5
Nodes expanded to reach solution: 7
task, t1 1
task, t2 1
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t2 before t6
constraint, t3 after t4
domain, t3 fri
domain, t5 mon
domain, t1 ends-by fri 2pm 20
domain, t2 ends-by mon 2pm 12
domain, t3 ends-by tue 4pm 18
domain, t4 ends-by fri 12pm 11
domain, t5 ends-by mon 2pm 20
domain, t6 ends-by thu 1pm 5
task, t1 1
task, t2 1
task, t3 2
task, t4 3
task, t5 1
task, t6 4
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 before t5
constraint, t2 before t6
constraint, t3 after t4
domain, t3 fri
domain, t5 mon
domain, t1 ends-by fri 2pm 20
domain, t2 ends-by mon 2pm 12
domain, t3 ends-by tue 4pm 18
domain, t4 ends-by fri 12pm 11
domain, t5 ends-by mon 2pm 20
domain, t6 ends-by thu 1pm 5
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {0, 1, 2} and {3, 4, 5}
Splitting t2 into {0} and {1, 2}
Splitting t3 into {32, 33, 34} and {35, 36, 37}
Splitting t3 into {32} and {33, 34}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t5 into {1, 2, 3} and {4, 5, 6}
```

```
Splitting t5 into {1} and {2, 3}
Splitting t6 into {1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19, 2
4, 25, 26, 27}
Splitting t6 into {8, 1, 2, 3} and {9, 10, 11, 16, 17}
Splitting t6 into {8, 1} and {2, 3}
Splitting t6 into {8} and {1}
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 2
task, t6 1
constraint, t1 after t2
constraint, t1 starts-at t3
constraint, t2 before t4
constraint, t3 after t4
constraint, t3 same-day t5
constraint, t3 after t6
constraint, t4 same-day t5
domain, t1 ends-by thu 4pm 5
domain, t2 ends-by wed 4pm 5
domain, t3 ends-by wed 10am 11
domain, t4 ends-by fri 2pm 19
domain, t5 ends-by tue 4pm 10
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 2
task, t6 1
constraint, t1 after t2
constraint, t1 starts-at t3
constraint, t2 before t4
constraint, t3 after t4
constraint, t3 same-day t5
constraint, t3 after t6
constraint, t4 same-day t5
domain, t1 ends-by thu 4pm 5
domain, t2 ends-by wed 4pm 5
domain, t3 ends-by wed 10am 11
domain, t4 ends-by fri 2pm 19
domain, t5 ends-by tue 4pm 10
task, t1 2
task, t2 3
task, t3 3
task, t4 3
task, t5 2
task, t6 1
constraint, t1 after t2
constraint, t1 starts-at t3
constraint, t2 before t4
constraint, t3 after t4
constraint, t3 same-day t5
constraint, t3 after t6
constraint, t4 same-day t5
domain, t1 ends-by thu 4pm 5
domain, t2 ends-by wed 4pm 5
domain, t3 ends-by wed 10am 11
domain, t4 ends-by fri 2pm 19
domain, t5 ends-by tue 4pm 10
```

```
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t2 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t5 tue
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 4pm 14
domain, t4 ends-by tue 10am 12
domain, t5 ends-by wed 1pm 18
domain, t6 ends-by wed 2pm 20
Nodes expanded to reach solution: 31702
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t2 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t5 tue
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 4pm 14
domain, t4 ends-by tue 10am 12
domain, t5 ends-by wed 1pm 18
domain, t6 ends-by wed 2pm 20
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t2 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t5 tue
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 4pm 14
domain, t4 ends-by tue 10am 12
domain, t5 ends-by wed 1pm 18
domain, t6 ends-by wed 2pm 20
Nodes expanded to reach solution: 6
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t2 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t5 tue
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 4pm 14
```

```
domain, t4 ends-by tue 10am 12
domain, t5 ends-by wed 1pm 18
domain, t6 ends-by wed 2pm 20
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 2
task, t6 3
constraint, t2 after t5
constraint, t4 before t6
constraint, t5 before t6
domain, t5 tue
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 4pm 14
domain, t4 ends-by tue 10am 12
domain, t5 ends-by wed 1pm 18
domain, t6 ends-by wed 2pm 20
Splitting t1 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t1 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t1 into {0, 1} and {8, 2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24} and {32, 3
3, 34, 35, 36, 37, 38, 25, 26, 27, 28, 29, 30}
Splitting t2 into {10, 11, 12, 13, 14, 16} and {17, 18, 19, 20, 21, 22, 24}
Splitting t2 into {10, 11, 12} and {16, 13, 14}
Splitting t2 into {10} and {11, 12}
Splitting t3 into {0, 1, 2, 3, 8, 9, 10, 11, 16, 17} and {32, 33, 34, 35, 18, 19,
24, 25, 26, 27}
Splitting t3 into {0, 1, 2, 3, 8} and {9, 10, 11, 16, 17}
Splitting t3 into {0, 1} and {8, 2, 3}
Splitting t3 into {0} and {1}
Splitting t4 into {0, 1, 2, 3, 4, 8, 9, 10, 11, 12, 16} and {32, 33, 17, 18, 19,
20, 24, 25, 26, 27, 28}
Splitting t4 into {0, 1, 2, 3, 4} and {8, 9, 10, 11, 12, 16}
Splitting t4 into {0, 1} and {2, 3, 4}
Splitting t4 into {0} and {1}
Splitting t6 into {32, 33, 34, 35, 36, 10, 11, 12, 16} and {17, 18, 19, 20, 24, 2
5, 26, 27, 28}
Splitting t6 into {32, 33, 34, 35} and {36, 10, 11, 12, 16}
Splitting t6 into {10, 36} and {16, 11, 12}
Splitting t6 into {10} and {36}
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t2 after t5
constraint, t3 before t5
constraint, t4 starts-at t5
constraint, t4 same-day t6
constraint, t5 before t6
domain, t1 ends-by mon 10am 20
domain, t3 ends-by tue 3pm 5
domain, t6 ends-by tue 11am 11
Nodes expanded to reach solution: 117298
task, t1 1
task, t2 3
```

```
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t2 after t5
constraint, t3 before t5
constraint, t4 starts-at t5
constraint, t4 same-day t6
constraint, t5 before t6
domain, t1 ends-by mon 10am 20
domain, t3 ends-by tue 3pm 5
domain, t6 ends-by tue 11am 11
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t2 after t5
constraint, t3 before t5
constraint, t4 starts-at t5
constraint, t4 same-day t6
constraint, t5 before t6
domain, t1 ends-by mon 10am 20
domain, t3 ends-by tue 3pm 5
domain, t6 ends-by tue 11am 11
Nodes expanded to reach solution: 16
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t2 after t5
constraint, t3 before t5
constraint, t4 starts-at t5
constraint, t4 same-day t6
constraint, t5 before t6
domain, t1 ends-by mon 10am 20
domain, t3 ends-by tue 3pm 5
domain, t6 ends-by tue 11am 11
task, t1 1
task, t2 3
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t2 after t5
constraint, t3 before t5
constraint, t4 starts-at t5
constraint, t4 same-day t6
constraint, t5 before t6
domain, t1 ends-by mon 10am 20
domain, t3 ends-by tue 3pm 5
domain, t6 ends-by tue 11am 11
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18} and
{32, 33, 34, 35, 36, 37, 38, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30}
Splitting t1 into {0, 1, 2, 3, 4, 5, 6, 8} and {9, 10, 11, 12, 13, 14, 16, 17, 1
8}
Splitting t1 into {0, 1, 2, 3} and {8, 4, 5, 6}
```

```
Splitting t1 into {0, 1} and {2, 3}
Splitting t1 into {0} and {1}
Splitting t2 into {8, 9, 10, 11, 12, 16, 17, 18, 19, 20} and {32, 33, 34, 35, 36,
24, 25, 26, 27, 28}
Splitting t2 into {8, 9, 10, 11, 12} and {16, 17, 18, 19, 20}
Splitting t2 into {8, 9} and {10, 11, 12}
Splitting t2 into {8} and {9}

[n=3]  nodes  DFS=101.6, MRV=3.3  |  first-cost  DFS=152.4, MRV=152.4, optimal=15
2.4

[n=4]  nodes  DFS=7843.4, MRV=7.0  |  first-cost  DFS=85.4, MRV=109.9, optimal=8
5.4

[n=5]  nodes  DFS=44856.8, MRV=33.4  |  first-cost  DFS=395.8, MRV=424.9, optimal
=395.8

[n=6]  nodes  DFS=1969356.0, MRV=95.9  |  first-cost  DFS=182.5, MRV=182.5, optim
al=182.5
```


DFS vs DFS-MRV — average nodes expanded

First-solution of DFS & DFS-MRV vs optimal
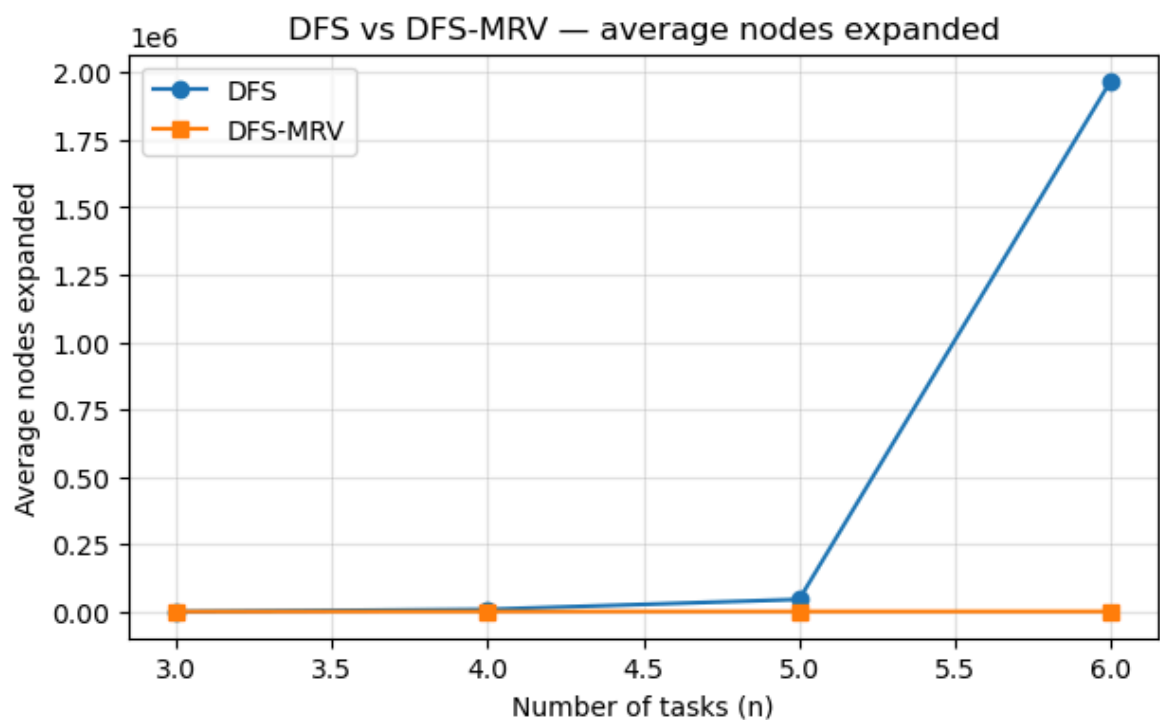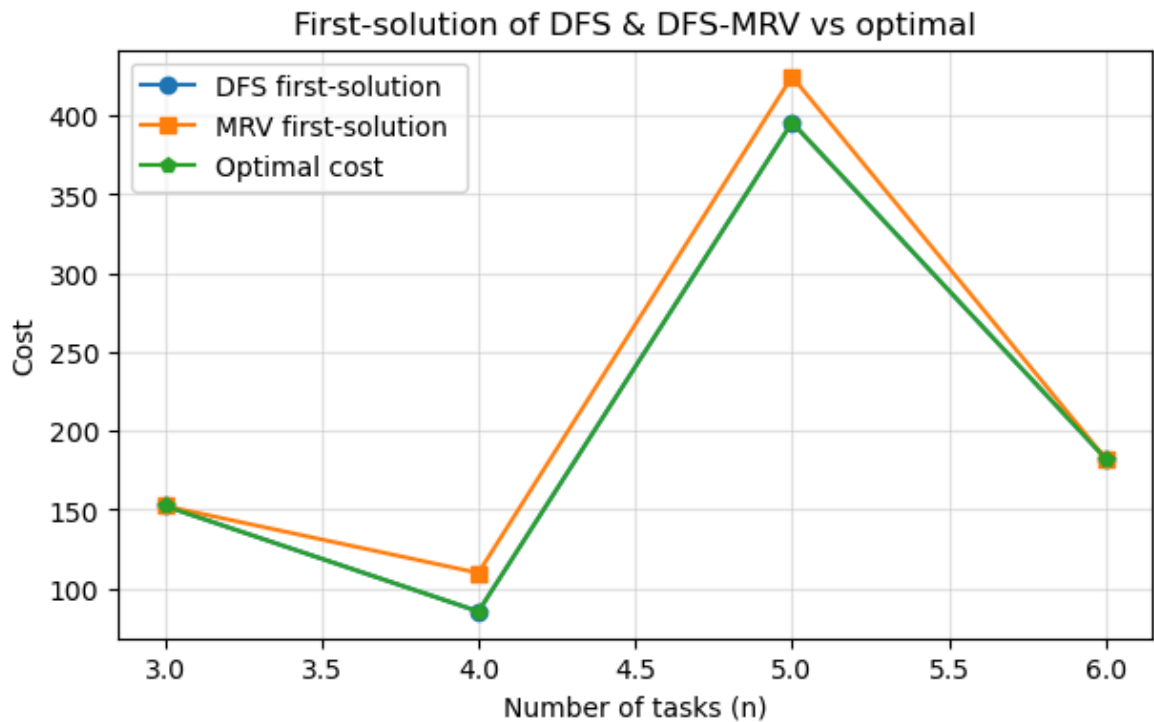
Answers for Question 4

1. We assume d is the average domain size and n is the number of tasks.

- DFS: time complexity O(d^n); space complexity O(n)
- DFS-MRV: time complexity O(d^n); space complexity O(n*d)

2.

- Completeness: Both algorithms are complete. Provided a solution exists, they will ultimately find it.
- Optimality: Neither algorithm guarantees optimality. They return the first solution encountered rather than the solution with the lowest cost.

3. When facing constraints such as same-day/starts-at/before/after, DFS-MRV prioritizes variables with smaller domains to reduce the search space, thus efficiently finding solutions. However, for DFS randomly selecting variables may first attempt larger domains, leading to numerous invalid attempts.

- RESULT:
- [n=3] nodes DFS=101.6, MRV=3.3 | first-cost DFS=152.4, MRV=152.4, optimal=152.4
- [n=4] nodes DFS=7843.4, MRV=7.0 | first-cost DFS=85.4, MRV=109.9, optimal=85.4
- [n=5] nodes DFS=44856.8, MRV=33.4 | first-cost DFS=395.8, MRV=424.9, optimal=395.8
- [n=6] nodes DFS=1969356.0, MRV=95.9 | first-cost DFS=182.5, MRV=182.5, optimal=182.5

4. When n=3,6, the first solution of both methods equals the optimal solution.

When n=4,5, the first solution of MRV exceeds both DFS and the optimal solution; MRV does not guarantee the first solution will be optimal. 5. As n increases, the number of

expanded nodes in DFS–MRV is significantly smaller than that in DFS.

Question 5 (4 marks)

The DFS solver chooses variables in random order, and systematically explores all values for those variables in no particular order.

Incorporate costs into the DFS constraint solver as heuristics to guide the search. Similar to the cost function for the domain splitting solver, for a given variable *v*, the cost of assigning the value *val* to *v* is the cost of violating the soft deadline constraint (if any) associated with *v* for the value *val*. The *minimum cost* for *v* is the lowest cost from amongst the values in the domain of *v*. The DFS solver should choose a variable *v* with lowest minimum cost, and explore its values in order of cost from lowest to highest.

- Implement this behaviour by modifying the code in `dfs_solver` and place a copy of the code below (2 marks)
- Empirically compare the performance of DFS with and without these heuristics (2 marks)

For the empirical evaluations, again run the two algorithms on a variety of problems of size `n` for varying `n` .

```python
import matplotlib.pyplot as plt

# Soft cost function
def value_cost(csp, var, val):
    funcs = csp.cost_functions.get(var, [])
    f = funcs[0] if funcs else None
    if f is None or getattr(f, "__name__", "") != "ends_by":# ends_by, no soft c
        return 0
    return f(val, csp.soft_day_time[var], csp.durations[var], int(csp.soft_costs
# Calculate the minimum soft cost of a single variable
def min_cost_domain(csp, var, dom_vals):
    if not dom_vals:
        return float('inf')
    return min(value_cost(csp, var, v) for v in dom_vals)

# Cost heuristic DFS for q5
def dfs_solver_q5(constraints, domains, context, var_order, csp):
    global num_expanded
    to_eval = {c for c in constraints if c.can_evaluate(context)}# Assign the co
    if all(c.holds(context) for c in to_eval): # Check whether the hard constrai
        unassigned = [v for v in var_order if v not in context]
        if not unassigned:
            yield context
        else:
            rem_cons = [c for c in constraints if c not in to_eval]

            # Sorted by the minimum soft cost
            scored = [(min_cost_domain(csp, v, domains[v]), v) for v in unassign
            scored.sort(key=lambda t: (t[0], t[1]))
            var = scored[0][1]

            # The soft cost ranking of each value
```

```python
            ordered_vals = sorted(list(domains[var]), key=lambda val: value_cost

            for val in ordered_vals:
                num_expanded += 1 # For each value tried, the number of expanded
                yield from dfs_solver_q5(rem_cons, domains, context | {var: val}

def dfs_solve1_q5(csp):
    global num_expanded
    num_expanded = 0
    init_order = list(csp.domains)
    # return the first solution
    for sol in dfs_solver_q5(csp.constraints, csp.domains, {}, init_order, csp):
        return sol

def run_q5_test(n_values=(3,4,5,6), trials=20, seed_base=900):
    xs = list(n_values)
    base_nodes_means, q5_nodes_means = [], []

    def avg(a): return sum(a)/len(a) if a else float('nan')

    for n in n_values:
        base_nodes, q5_nodes = [], []
        # the seeds
        specs = [generate_problem(n, seed=seed_base + 1000*n + k) for k in range

        for spec in specs:
            # DFS
            global num_expanded
            num_expanded = 0
            _ = dfs_solve1(create_CSP_from_spec(spec))
            base_nodes.append(num_expanded)

            # Cost heuristic DFS
            num_expanded = 0
            _ = dfs_solve1_q5(create_CSP_from_spec(spec))
            q5_nodes.append(num_expanded)

        m_bn, m_qn = avg(base_nodes), avg(q5_nodes)
        base_nodes_means.append(m_bn); q5_nodes_means.append(m_qn)

        gain = 100.0*(m_bn - m_qn)/m_bn if m_bn else 0.0
        print(f"[n={n}]  DFS={m_bn:.1f}  |  DFS(Cost heuristic)={m_qn:.1f}    (R

    # Show result
    plt.figure(figsize=(7,4))
    plt.plot(xs, base_nodes_means, marker='o', label=' DFS')
    plt.plot(xs, q5_nodes_means,   marker='s', label=' DFS(Cost heuristic)')
    plt.xlabel('task n'); plt.ylabel('Average number of expanded nodes')
    plt.title('DFS vs  DFS(Cost heuristic)')
    plt.grid(True, alpha=0.35); plt.legend(); plt.show()


run_q5_test(n_values=(3,4,5,6), trials=10, seed_base=400)
```

```
task, t1 4
task, t2 4
task, t3 2
constraint, t1 before t2
domain, t1 mon
domain, t2 thu
Nodes expanded to reach solution: 3
task, t1 4
task, t2 4
task, t3 2
constraint, t1 before t2
domain, t1 mon
domain, t2 thu
task, t1 4
task, t2 3
task, t3 3
constraint, t1 after t2
domain, t1 ends-by thu 3pm 5
domain, t2 ends-by mon 2pm 17
domain, t3 ends-by fri 3pm 6
Nodes expanded to reach solution: 81
task, t1 4
task, t2 3
task, t3 3
constraint, t1 after t2
domain, t1 ends-by thu 3pm 5
domain, t2 ends-by mon 2pm 17
domain, t3 ends-by fri 3pm 6
task, t1 3
task, t2 3
task, t3 3
constraint, t1 same-day t3
constraint, t2 before t3
domain, t1 ends-by mon 11am 14
domain, t3 ends-by wed 9am 16
Nodes expanded to reach solution: 6
task, t1 3
task, t2 3
task, t3 3
constraint, t1 same-day t3
constraint, t2 before t3
domain, t1 ends-by mon 11am 14
domain, t3 ends-by wed 9am 16
task, t1 1
task, t2 2
task, t3 3
constraint, t1 before t2
constraint, t1 same-day t3
Nodes expanded to reach solution: 4
task, t1 1
task, t2 2
task, t3 3
constraint, t1 before t2
constraint, t1 same-day t3
task, t1 4
task, t2 1
task, t3 4
domain, t1 ends-by thu 11am 12
domain, t3 ends-by fri 2pm 14
Nodes expanded to reach solution: 3
```

```
task, t1 4
task, t2 1
task, t3 4
domain, t1 ends-by thu 11am 12
domain, t3 ends-by fri 2pm 14
task, t1 2
task, t2 2
task, t3 2
constraint, t2 after t3
domain, t1 ends-by fri 10am 9
domain, t2 ends-by wed 9am 15
domain, t3 ends-by fri 2pm 19
Nodes expanded to reach solution: 65
task, t1 2
task, t2 2
task, t3 2
constraint, t2 after t3
domain, t1 ends-by fri 10am 9
domain, t2 ends-by wed 9am 15
domain, t3 ends-by fri 2pm 19
task, t1 3
task, t2 2
task, t3 1
constraint, t1 after t2
constraint, t1 after t3
constraint, t2 after t3
domain, t2 wed
domain, t1 ends-by tue 1pm 20
domain, t2 ends-by mon 9am 16
domain, t3 ends-by fri 12pm 15
Nodes expanded to reach solution: 87
task, t1 3
task, t2 2
task, t3 1
constraint, t1 after t2
constraint, t1 after t3
constraint, t2 after t3
domain, t2 wed
domain, t1 ends-by tue 1pm 20
domain, t2 ends-by mon 9am 16
domain, t3 ends-by fri 12pm 15
task, t1 1
task, t2 4
task, t3 2
constraint, t1 before t2
domain, t1 ends-by wed 12pm 15
domain, t2 ends-by mon 10am 12
domain, t3 ends-by mon 1pm 6
Nodes expanded to reach solution: 4
task, t1 1
task, t2 4
task, t3 2
constraint, t1 before t2
domain, t1 ends-by wed 12pm 15
domain, t2 ends-by mon 10am 12
domain, t3 ends-by mon 1pm 6
task, t1 2
task, t2 4
task, t3 4
constraint, t1 before t2
```

```
constraint, t2 after t3
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by tue 10am 8
Nodes expanded to reach solution: 47
task, t1 2
task, t2 4
task, t3 4
constraint, t1 before t2
constraint, t2 after t3
domain, t2 ends-by wed 4pm 7
domain, t3 ends-by tue 10am 8
task, t1 1
task, t2 4
task, t3 1
constraint, t2 after t3
domain, t2 ends-by fri 2pm 10
domain, t3 ends-by mon 3pm 14
Nodes expanded to reach solution: 39
task, t1 1
task, t2 4
task, t3 1
constraint, t2 after t3
domain, t2 ends-by fri 2pm 10
domain, t3 ends-by mon 3pm 14
[n=3]  DFS=33.9  |  DFS(Cost heuristic)=119.1    (Reduction -251.3%)
task, t1 1
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by thu 9am 10
domain, t2 ends-by mon 10am 8
domain, t3 ends-by thu 4pm 8
domain, t4 ends-by tue 4pm 13
Nodes expanded to reach solution: 4
task, t1 1
task, t2 2
task, t3 2
task, t4 1
domain, t1 ends-by thu 9am 10
domain, t2 ends-by mon 10am 8
domain, t3 ends-by thu 4pm 8
domain, t4 ends-by tue 4pm 13
task, t1 4
task, t2 2
task, t3 1
task, t4 3
domain, t4 thu
domain, t2 ends-by thu 2pm 6
domain, t4 ends-by thu 10am 13
Nodes expanded to reach solution: 4
task, t1 4
task, t2 2
task, t3 1
task, t4 3
domain, t4 thu
domain, t2 ends-by thu 2pm 6
domain, t4 ends-by thu 10am 13
task, t1 2
task, t2 2
task, t3 3
```

```
task, t4 4
domain, t2 wed
domain, t2 ends-by fri 11am 17
domain, t3 ends-by fri 10am 19
domain, t4 ends-by mon 12pm 19
Nodes expanded to reach solution: 4
task, t1 2
task, t2 2
task, t3 3
task, t4 4
domain, t2 wed
domain, t2 ends-by fri 11am 17
domain, t3 ends-by fri 10am 19
domain, t4 ends-by mon 12pm 19
task, t1 3
task, t2 2
task, t3 3
task, t4 2
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by mon 12pm 12
domain, t2 ends-by wed 1pm 15
domain, t3 ends-by thu 9am 13
domain, t4 ends-by wed 10am 10
Nodes expanded to reach solution: 7
task, t1 3
task, t2 2
task, t3 3
task, t4 2
constraint, t2 same-day t3
constraint, t3 before t4
domain, t1 ends-by mon 12pm 12
domain, t2 ends-by wed 1pm 15
domain, t3 ends-by thu 9am 13
domain, t4 ends-by wed 10am 10
task, t1 4
task, t2 4
task, t3 1
task, t4 3
constraint, t1 starts-at t4
constraint, t2 before t3
constraint, t2 starts-at t4
domain, t1 wed
domain, t3 wed
domain, t1 ends-by mon 2pm 9
domain, t2 ends-by fri 4pm 16
domain, t4 ends-by wed 1pm 19
task, t1 4
task, t2 4
task, t3 1
task, t4 3
constraint, t1 starts-at t4
constraint, t2 before t3
constraint, t2 starts-at t4
domain, t1 wed
domain, t3 wed
domain, t1 ends-by mon 2pm 9
domain, t2 ends-by fri 4pm 16
domain, t4 ends-by wed 1pm 19
task, t1 1
```

```
task, t2 2
task, t3 1
task, t4 2
constraint, t2 after t3
domain, t1 mon
domain, t2 wed
domain, t1 ends-by thu 3pm 6
domain, t2 ends-by mon 4pm 15
domain, t3 ends-by tue 4pm 8
Nodes expanded to reach solution: 4
task, t1 1
task, t2 2
task, t3 1
task, t4 2
constraint, t2 after t3
domain, t1 mon
domain, t2 wed
domain, t1 ends-by thu 3pm 6
domain, t2 ends-by mon 4pm 15
domain, t3 ends-by tue 4pm 8
task, t1 1
task, t2 2
task, t3 3
task, t4 1
constraint, t2 after t3
constraint, t3 after t4
domain, t1 ends-by wed 12pm 9
domain, t2 ends-by wed 9am 20
domain, t3 ends-by mon 10am 14
domain, t4 ends-by wed 10am 15
Nodes expanded to reach solution: 179
task, t1 1
task, t2 2
task, t3 3
task, t4 1
constraint, t2 after t3
constraint, t3 after t4
domain, t1 ends-by wed 12pm 9
domain, t2 ends-by wed 9am 20
domain, t3 ends-by mon 10am 14
domain, t4 ends-by wed 10am 15
task, t1 3
task, t2 4
task, t3 3
task, t4 4
constraint, t3 same-day t4
domain, t4 thu
domain, t1 ends-by mon 11am 9
domain, t2 ends-by mon 1pm 7
domain, t3 ends-by mon 4pm 7
domain, t4 ends-by wed 2pm 7
Nodes expanded to reach solution: 79
task, t1 3
task, t2 4
task, t3 3
task, t4 4
constraint, t3 same-day t4
domain, t4 thu
domain, t1 ends-by mon 11am 9
domain, t2 ends-by mon 1pm 7
```

```
domain, t3 ends-by mon 4pm 7
domain, t4 ends-by wed 2pm 7
task, t1 4
task, t2 1
task, t3 1
task, t4 1
domain, t1 ends-by wed 12pm 19
domain, t3 ends-by fri 12pm 13
domain, t4 ends-by tue 10am 5
Nodes expanded to reach solution: 4
task, t1 4
task, t2 1
task, t3 1
task, t4 1
domain, t1 ends-by wed 12pm 19
domain, t3 ends-by fri 12pm 13
domain, t4 ends-by tue 10am 5
task, t1 2
task, t2 3
task, t3 3
task, t4 3
constraint, t1 after t2
constraint, t3 after t4
domain, t2 thu
domain, t1 ends-by tue 4pm 19
domain, t2 ends-by fri 10am 10
domain, t3 ends-by mon 2pm 11
domain, t4 ends-by tue 9am 8
Nodes expanded to reach solution: 208
task, t1 2
task, t2 3
task, t3 3
task, t4 3
constraint, t1 after t2
constraint, t3 after t4
domain, t2 thu
domain, t1 ends-by tue 4pm 19
domain, t2 ends-by fri 10am 10
domain, t3 ends-by mon 2pm 11
domain, t4 ends-by tue 9am 8
[n=4]  DFS=733.7  |  DFS(Cost heuristic)=754.4    (Reduction -2.8%)
task, t1 4
task, t2 2
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t2
constraint, t1 after t3
constraint, t2 before t3
domain, t1 ends-by wed 9am 11
domain, t2 ends-by fri 1pm 5
domain, t4 ends-by mon 3pm 5
domain, t5 ends-by tue 4pm 19
Nodes expanded to reach solution: 191
task, t1 4
task, t2 2
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t2
```

```
constraint, t1 after t3
constraint, t2 before t3
domain, t1 ends-by wed 9am 11
domain, t2 ends-by fri 1pm 5
domain, t4 ends-by mon 3pm 5
domain, t5 ends-by tue 4pm 19
task, t1 2
task, t2 4
task, t3 3
task, t4 2
task, t5 3
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t2 after t3
constraint, t3 after t5
domain, t1 thu
domain, t1 ends-by fri 4pm 17
domain, t3 ends-by thu 1pm 13
domain, t4 ends-by wed 4pm 9
domain, t5 ends-by mon 4pm 12
Nodes expanded to reach solution: 430
task, t1 2
task, t2 4
task, t3 3
task, t4 2
task, t5 3
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t2 after t3
constraint, t3 after t5
domain, t1 thu
domain, t1 ends-by fri 4pm 17
domain, t3 ends-by thu 1pm 13
domain, t4 ends-by wed 4pm 9
domain, t5 ends-by mon 4pm 12
task, t1 3
task, t2 4
task, t3 3
task, t4 2
task, t5 1
constraint, t1 before t2
constraint, t1 before t3
constraint, t1 after t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t3 same-day t4
constraint, t4 after t5
domain, t2 mon
domain, t1 ends-by mon 1pm 17
domain, t2 ends-by fri 4pm 12
domain, t3 ends-by fri 12pm 18
domain, t4 ends-by wed 9am 7
domain, t5 ends-by thu 10am 10
task, t1 3
task, t2 4
task, t3 3
task, t4 2
task, t5 1
constraint, t1 before t2
constraint, t1 before t3
```

```
constraint, t1 after t4
constraint, t1 same-day t5
constraint, t2 after t4
constraint, t3 same-day t4
constraint, t4 after t5
domain, t2 mon
domain, t1 ends-by mon 1pm 17
domain, t2 ends-by fri 4pm 12
domain, t3 ends-by fri 12pm 18
domain, t4 ends-by wed 9am 7
domain, t5 ends-by thu 10am 10
task, t1 4
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 same-day t5
constraint, t3 same-day t4
domain, t1 thu
domain, t1 ends-by tue 3pm 16
domain, t5 ends-by fri 11am 8
Nodes expanded to reach solution: 17
task, t1 4
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 same-day t5
constraint, t3 same-day t4
domain, t1 thu
domain, t1 ends-by tue 3pm 16
domain, t5 ends-by fri 11am 8
task, t1 1
task, t2 1
task, t3 3
task, t4 3
task, t5 1
domain, t3 fri
domain, t2 ends-by wed 1pm 12
domain, t3 ends-by thu 12pm 12
domain, t5 ends-by wed 11am 14
Nodes expanded to reach solution: 5
task, t1 1
task, t2 1
task, t3 3
task, t4 3
task, t5 1
domain, t3 fri
domain, t2 ends-by wed 1pm 12
domain, t3 ends-by thu 12pm 12
domain, t5 ends-by wed 11am 14
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t1 after t2
constraint, t1 after t4
constraint, t2 before t4
domain, t5 mon
```

```
domain, t1 ends-by tue 2pm 13
domain, t4 ends-by wed 2pm 14
domain, t5 ends-by thu 9am 14
Nodes expanded to reach solution: 3282
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t1 after t2
constraint, t1 after t4
constraint, t2 before t4
domain, t5 mon
domain, t1 ends-by tue 2pm 13
domain, t4 ends-by wed 2pm 14
domain, t5 ends-by thu 9am 14
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
constraint, t1 after t3
constraint, t1 after t4
domain, t5 thu
domain, t1 ends-by wed 1pm 7
domain, t2 ends-by tue 11am 17
domain, t4 ends-by wed 11am 18
domain, t5 ends-by mon 3pm 16
Nodes expanded to reach solution: 1266
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
constraint, t1 after t3
constraint, t1 after t4
domain, t5 thu
domain, t1 ends-by wed 1pm 7
domain, t2 ends-by tue 11am 17
domain, t4 ends-by wed 11am 18
domain, t5 ends-by mon 3pm 16
task, t1 2
task, t2 1
task, t3 2
task, t4 1
task, t5 4
constraint, t1 before t3
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t1 ends-by tue 11am 18
domain, t2 ends-by fri 11am 14
domain, t3 ends-by tue 2pm 12
domain, t4 ends-by tue 10am 9
domain, t5 ends-by wed 4pm 20
Nodes expanded to reach solution: 7
task, t1 2
task, t2 1
task, t3 2
task, t4 1
task, t5 4
```

```
constraint, t1 before t3
constraint, t3 same-day t5
constraint, t4 same-day t5
domain, t1 ends-by tue 11am 18
domain, t2 ends-by fri 11am 14
domain, t3 ends-by tue 2pm 12
domain, t4 ends-by tue 10am 9
domain, t5 ends-by wed 4pm 20
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 2
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 starts-at t3
constraint, t2 after t5
domain, t1 ends-by tue 9am 9
domain, t2 ends-by wed 4pm 9
domain, t4 ends-by mon 3pm 9
domain, t5 ends-by wed 10am 7
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 2
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 starts-at t3
constraint, t2 after t5
domain, t1 ends-by tue 9am 9
domain, t2 ends-by wed 4pm 9
domain, t4 ends-by mon 3pm 9
domain, t5 ends-by wed 10am 7
task, t1 4
task, t2 2
task, t3 4
task, t4 1
task, t5 4
constraint, t1 starts-at t5
constraint, t2 same-day t5
constraint, t3 same-day t4
domain, t5 thu
domain, t1 ends-by tue 9am 14
domain, t2 ends-by fri 9am 10
domain, t3 ends-by tue 3pm 10
domain, t5 ends-by mon 2pm 17
task, t1 4
task, t2 2
task, t3 4
task, t4 1
task, t5 4
constraint, t1 starts-at t5
constraint, t2 same-day t5
constraint, t3 same-day t4
domain, t5 thu
domain, t1 ends-by tue 9am 14
domain, t2 ends-by fri 9am 10
```

```
domain, t3 ends-by tue 3pm 10
domain, t5 ends-by mon 2pm 17
[n=5]  DFS=78200.3  |  DFS(Cost heuristic)=78205.1    (Reduction -0.0%)
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t1 after t5
constraint, t2 same-day t6
domain, t3 ends-by thu 9am 5
domain, t4 ends-by fri 10am 6
domain, t5 ends-by thu 4pm 10
Nodes expanded to reach solution: 125028
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
task, t6 2
constraint, t1 after t4
constraint, t1 after t5
constraint, t2 same-day t6
domain, t3 ends-by thu 9am 5
domain, t4 ends-by fri 10am 6
domain, t5 ends-by thu 4pm 10
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 2
task, t6 4
constraint, t2 after t6
constraint, t3 after t5
constraint, t4 before t5
domain, t6 mon
domain, t1 ends-by thu 3pm 11
domain, t2 ends-by fri 10am 10
domain, t4 ends-by mon 9am 17
domain, t5 ends-by thu 3pm 9
Nodes expanded to reach solution: 115093
task, t1 2
task, t2 2
task, t3 3
task, t4 3
task, t5 2
task, t6 4
constraint, t2 after t6
constraint, t3 after t5
constraint, t4 before t5
domain, t6 mon
domain, t1 ends-by thu 3pm 11
domain, t2 ends-by fri 10am 10
domain, t4 ends-by mon 9am 17
domain, t5 ends-by thu 3pm 9
task, t1 4
task, t2 2
task, t3 2
```

```
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 before t3
constraint, t2 starts-at t4
constraint, t2 after t6
constraint, t3 after t4
constraint, t3 after t6
domain, t1 ends-by fri 10am 10
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by tue 1pm 20
domain, t4 ends-by wed 12pm 14
domain, t5 ends-by fri 11am 20
domain, t6 ends-by fri 1pm 11
Nodes expanded to reach solution: 5146
task, t1 4
task, t2 2
task, t3 2
task, t4 4
task, t5 2
task, t6 4
constraint, t1 same-day t3
constraint, t1 same-day t5
constraint, t2 before t3
constraint, t2 starts-at t4
constraint, t2 after t6
constraint, t3 after t4
constraint, t3 after t6
domain, t1 ends-by fri 10am 10
domain, t2 ends-by thu 4pm 6
domain, t3 ends-by tue 1pm 20
domain, t4 ends-by wed 12pm 14
domain, t5 ends-by fri 11am 20
domain, t6 ends-by fri 1pm 11
task, t1 2
task, t2 3
task, t3 4
task, t4 4
task, t5 1
task, t6 4
constraint, t1 before t3
constraint, t1 before t4
constraint, t1 same-day t6
constraint, t2 same-day t3
constraint, t2 before t6
domain, t3 fri
domain, t1 ends-by tue 4pm 15
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by thu 10am 17
domain, t5 ends-by thu 1pm 9
Nodes expanded to reach solution: 3717169
task, t1 2
task, t2 3
task, t3 4
task, t4 4
task, t5 1
task, t6 4
constraint, t1 before t3
```

```
constraint, t1 before t4
constraint, t1 same-day t6
constraint, t2 same-day t3
constraint, t2 before t6
domain, t3 fri
domain, t1 ends-by tue 4pm 15
domain, t2 ends-by mon 1pm 7
domain, t4 ends-by thu 10am 17
domain, t5 ends-by thu 1pm 9
task, t1 1
task, t2 1
task, t3 3
task, t4 3
task, t5 2
task, t6 2
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t4 same-day t5
domain, t1 mon
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by tue 2pm 5
domain, t3 ends-by thu 12pm 17
domain, t4 ends-by wed 11am 5
domain, t5 ends-by fri 11am 5
domain, t6 ends-by thu 9am 13
Nodes expanded to reach solution: 1959
task, t1 1
task, t2 1
task, t3 3
task, t4 3
task, t5 2
task, t6 2
constraint, t2 after t4
constraint, t2 same-day t5
constraint, t4 same-day t5
domain, t1 mon
domain, t1 ends-by tue 1pm 8
domain, t2 ends-by tue 2pm 5
domain, t3 ends-by thu 12pm 17
domain, t4 ends-by wed 11am 5
domain, t5 ends-by fri 11am 5
domain, t6 ends-by thu 9am 13
task, t1 3
task, t2 3
task, t3 2
task, t4 4
task, t5 4
task, t6 2
constraint, t1 after t5
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t2 ends-by thu 2pm 6
domain, t3 ends-by wed 1pm 11
domain, t5 ends-by mon 9am 12
domain, t6 ends-by tue 10am 7
task, t1 3
task, t2 3
```

```
task, t3 2
task, t4 4
task, t5 4
task, t6 2
constraint, t1 after t5
constraint, t2 same-day t4
constraint, t2 after t5
constraint, t3 after t4
constraint, t3 before t5
constraint, t3 same-day t6
domain, t2 ends-by thu 2pm 6
domain, t3 ends-by wed 1pm 11
domain, t5 ends-by mon 9am 12
domain, t6 ends-by tue 10am 7
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t4
constraint, t2 same-day t3
constraint, t2 same-day t6
domain, t1 mon
domain, t5 fri
domain, t1 ends-by tue 10am 13
domain, t2 ends-by tue 2pm 9
domain, t4 ends-by thu 1pm 13
domain, t5 ends-by fri 4pm 13
domain, t6 ends-by fri 9am 20
Nodes expanded to reach solution: 24650
task, t1 3
task, t2 1
task, t3 1
task, t4 4
task, t5 3
task, t6 4
constraint, t1 after t4
constraint, t2 same-day t3
constraint, t2 same-day t6
domain, t1 mon
domain, t5 fri
domain, t1 ends-by tue 10am 13
domain, t2 ends-by tue 2pm 9
domain, t4 ends-by thu 1pm 13
domain, t5 ends-by fri 4pm 13
domain, t6 ends-by fri 9am 20
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 4
task, t6 1
constraint, t1 starts-at t4
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 after t6
constraint, t4 same-day t6
domain, t6 mon
domain, t2 ends-by thu 12pm 5
```

```
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by wed 1pm 12
domain, t5 ends-by tue 3pm 6
domain, t6 ends-by wed 12pm 20
Nodes expanded to reach solution: 59125
task, t1 2
task, t2 1
task, t3 4
task, t4 4
task, t5 4
task, t6 1
constraint, t1 starts-at t4
constraint, t1 same-day t6
constraint, t2 before t5
constraint, t3 after t6
constraint, t4 same-day t6
domain, t6 mon
domain, t2 ends-by thu 12pm 5
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by wed 1pm 12
domain, t5 ends-by tue 3pm 6
domain, t6 ends-by wed 12pm 20
task, t1 4
task, t2 4
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t1 before t3
constraint, t1 after t4
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 before t5
domain, t1 thu
domain, t5 fri
domain, t1 ends-by wed 12pm 15
domain, t2 ends-by mon 9am 16
domain, t3 ends-by tue 1pm 17
domain, t4 ends-by mon 10am 6
Nodes expanded to reach solution: 28
task, t1 4
task, t2 4
task, t3 2
task, t4 2
task, t5 3
task, t6 2
constraint, t1 before t3
constraint, t1 after t4
constraint, t1 before t5
constraint, t2 before t3
constraint, t3 before t5
domain, t1 thu
domain, t5 fri
domain, t1 ends-by wed 12pm 15
domain, t2 ends-by mon 9am 16
domain, t3 ends-by tue 1pm 17
domain, t4 ends-by mon 10am 6
task, t1 2
task, t2 4
task, t3 2
```

```
task, t4 3
task, t5 2
task, t6 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t1 after t6
constraint, t5 same-day t6
domain, t2 mon
domain, t5 tue
domain, t1 ends-by thu 3pm 18
domain, t3 ends-by wed 10am 9
domain, t4 ends-by wed 11am 16
domain, t5 ends-by fri 11am 20
domain, t6 ends-by thu 9am 10
Nodes expanded to reach solution: 808622
task, t1 2
task, t2 4
task, t3 2
task, t4 3
task, t5 2
task, t6 2
constraint, t1 same-day t3
constraint, t1 before t5
constraint, t1 after t6
constraint, t5 same-day t6
domain, t2 mon
domain, t5 tue
domain, t1 ends-by thu 3pm 18
domain, t3 ends-by wed 10am 9
domain, t4 ends-by wed 11am 16
domain, t5 ends-by fri 11am 20
domain, t6 ends-by thu 9am 10
[n=6]  DFS=588872.0  |  DFS(Cost heuristic)=1433059.6    (Reduction -143.4%)
```


DFS vs DFS(Cost heuristic)
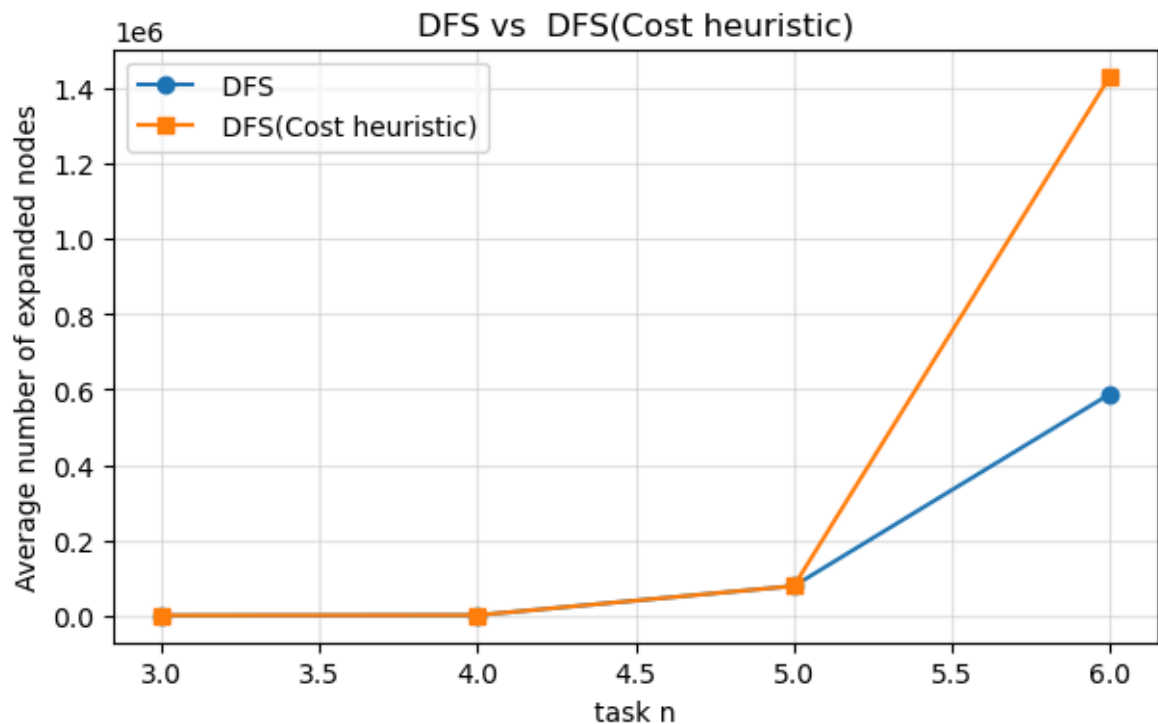
Answers for Question 5

2. When n=3,4,5, DFS with cost heuristics and without heuristics are basically equal. However, in this experiment, when n=6, the number of expanded nodes significantly increases with cost heuristics, reducing efficiency. This shows that using soft cost for sequential heuristics alone does not guarantee fewer expanded nodes. A possible reason is that heuristics may prioritize searching for seemingly cheaper start times. However, these assignments are more likely to conflict with hard constraints like same-day/before/after/starts-at, leading to deeper backtracking. This generates more expanded nodes, ultimately reducing efficiency.

Question 6 (3 marks)

The CSP solver with domain splitting splits a CSP variable domain into *exactly two* partitions. Poole & Mackworth claim that in practice, this is as good as splitting into a larger number of partitions. In this question, empirically evaluate this claim for fuzzy scheduling CSPs.

- Write a new `partition_domain` function that partitions a domain into a list of `k` partitions, where `k` is a parameter to the function (1 mark)
- Modify the CSP solver to use the list of `k` partitions and evaluate the performance of the solver using the above metric for a range of values of `k` (2 marks)

```
In [97]:  def partition_domain_k(domain_set, k):
              # Convert the set into a list based on the numerical values.
              vals = sorted(list(domain_set))
              if not vals:
                  return []
              # Ensure that the value of k is at least 1 and no more than the size of the
              k = max(1, min(k, len(vals)))
              size = len(vals)
              # The number of elements contained in each subset
              base = size // k
              extra = size % k
      # Store the list of the split sub-domains
              parts = []
              start = 0
              # Generate k subsets in a loop
              for i in range(k):
                  take = base + (1 if i < extra else 0)
                  chunk = vals[start:start+take]
                  parts.append(set(chunk))
                  start += take
              return parts


          class Search_with_AC_from_Cost_CSP_k:
              max_display_level = 0

              def __init__(self, csp, k=2):
                  # Record k, ensuring it is at least 1
                  self.k = max(1, k)

                  self.cons = Con_solver(csp)
                  self.domains = self.cons.make_arc_consistent(csp.domains)
                  self.constraints = csp.constraints
```

```python
        self.cost_functions = csp.cost_functions
        self.durations = csp.durations
        self.soft_day_time = csp.soft_day_time
        self.soft_costs = csp.soft_costs
        csp.domains = self.domains
        self.csp = csp


    def is_goal(self, node):
        """ node is a goal if all domains have exactly 1 element """
        return all(len(node.domains[var]) == 1 for var in node.domains)

    def start_node(self):
        return CSP_with_Cost(self.domains, self.durations, self.constraints,
                             self.cost_functions, self.soft_day_time, self.soft_

    def display(self, level, *args):
        if getattr(self, "max_display_level", 0) >= level:
            print(*args)

    def neighbors(self, node):
        """"returns the neighboring nodes of node.
        """
        neighs = []
        var = None
        for v in node.domains:
            if len(node.domains[v]) > 1:
                var = v
                break
        if var is None:         # If not, it indicates that all domains are single
            return neighs

        # Divide the domain of var using k partition method
        parts = partition_domain_k(node.domains[var], self.k)
        self.display(2, f"Splitting {var} into {len(parts)} parts.")
        to_do = self.cons.new_to_do(var, None)
# Traverse each sub-domain and generate sub-nodes
        for dom_part in parts:
            new_domains = node.domains | {var: dom_part}
            cons_doms = self.cons.make_arc_consistent(new_domains, to_do)
# Filter out invalid child nodes
            if all(len(cons_doms[v]) > 0 for v in cons_doms):
                child = CSP_with_Cost(cons_doms, self.durations, self.constraint
                                      self.cost_functions, self.soft_day_time, s
                neighs.append(Arc(node, child))
        return neighs

    def heuristic(self, n):
        return n.cost

# Solve a single problem using k and return the number of expanded nodes
def solve_one_with_k(spec, k):
    csp = create_CSP_from_spec(spec)
    searcher = GreedySearcher(Search_with_AC_from_Cost_CSP_k(csp, k))
    _ = searcher.search()
    nodes = getattr(searcher, "num_expanded", 0)
    return nodes
# Calculate the average
def avg_of(lst):
    return (sum(lst) / len(lst)) if lst else float("nan")
```

```python
def run_q6(k_values=(2,3,4,5), n_values=(3,4,5,6), trials=15, seed_base=1200):
    # List records of results
    results = {n: [] for n in n_values}
    for n in n_values:
        for k in k_values:
            nodes_list = []
            # Generated with a fixed seed to ensure fairness
            for t in range(trials):
                spec = generate_problem(n, seed=seed_base + 1000*n + t)
                nodes = solve_one_with_k(spec, k)
                nodes_list.append(nodes)

            mean_nodes = avg_of(nodes_list)
            results[n].append(mean_nodes)
            print(f"n={n}, k={k}: avg nodes = {mean_nodes:.1f}")
    # Show result
    plt.figure(figsize=(8,5))
    for n in n_values:
        plt.plot(list(k_values), results[n], marker='o', label=f'n={n}')
    plt.xlabel('The number of k')
    plt.ylabel('Average number of expanded nodes')
    plt.title('The performance of the solver using  a range of values of k')
    plt.grid(True, alpha=0.35)
    plt.legend()
    plt.show()
# Test
run_q6(k_values=(2,3,4,5), n_values=(2,3,4,5), trials=60, seed_base=1200)
```

```
task, t1 2
task, t2 4
constraint, t1 after t2
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by mon 11am 5
task, t1 3
task, t2 3
domain, t1 ends-by mon 1pm 5
task, t1 3
task, t2 2
domain, t1 ends-by fri 2pm 5
domain, t2 ends-by thu 12pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by mon 12pm 15
task, t1 1
task, t2 1
domain, t1 ends-by wed 9am 14
domain, t2 ends-by wed 3pm 6
task, t1 4
task, t2 3
domain, t1 ends-by tue 9am 15
domain, t2 ends-by mon 1pm 15
task, t1 2
task, t2 1
domain, t1 ends-by fri 11am 14
domain, t2 ends-by tue 3pm 14
task, t1 2
task, t2 3
domain, t1 ends-by wed 10am 5
domain, t2 ends-by fri 12pm 12
task, t1 1
task, t2 4
constraint, t1 before t2
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 12pm 9
task, t1 2
task, t2 3
constraint, t1 after t2
domain, t1 ends-by mon 12pm 10
domain, t2 ends-by thu 9am 11
task, t1 2
task, t2 3
constraint, t1 same-day t2
domain, t1 ends-by thu 12pm 20
domain, t2 ends-by tue 9am 5
task, t1 1
task, t2 1
constraint, t1 same-day t2
domain, t1 ends-by wed 3pm 14
domain, t2 ends-by thu 11am 11
task, t1 3
task, t2 2
domain, t2 ends-by mon 1pm 13
task, t1 4
task, t2 1
domain, t1 tue
domain, t1 ends-by fri 2pm 11
domain, t2 ends-by thu 11am 18
```

```
task, t1 3
task, t2 4
constraint, t1 same-day t2
domain, t2 thu
domain, t1 ends-by wed 10am 7
domain, t2 ends-by mon 10am 7
task, t1 1
task, t2 1
domain, t1 ends-by tue 9am 5
domain, t2 ends-by fri 4pm 14
task, t1 2
task, t2 2
domain, t1 ends-by tue 3pm 19
domain, t2 ends-by wed 2pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 1pm 6
domain, t2 ends-by thu 1pm 6
task, t1 2
task, t2 1
domain, t1 mon
domain, t1 ends-by fri 2pm 13
domain, t2 ends-by mon 11am 11
task, t1 4
task, t2 3
domain, t1 mon
domain, t1 ends-by mon 11am 11
domain, t2 ends-by mon 9am 7
task, t1 2
task, t2 3
domain, t2 fri
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by wed 1pm 15
task, t1 4
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by mon 9am 9
task, t1 4
task, t2 2
constraint, t1 starts-at t2
domain, t2 wed
domain, t2 ends-by fri 3pm 5
task, t1 4
task, t2 4
domain, t1 ends-by fri 12pm 13
domain, t2 ends-by wed 10am 10
task, t1 2
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 12pm 9
task, t1 3
task, t2 1
domain, t2 thu
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by wed 12pm 13
task, t1 3
task, t2 3
domain, t2 mon
domain, t1 ends-by tue 10am 8
domain, t2 ends-by tue 11am 13
```

```
task, t1 3
task, t2 3
constraint, t1 same-day t2
domain, t1 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by tue 1pm 8
task, t1 2
task, t2 2
domain, t1 mon
domain, t1 ends-by wed 10am 18
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 mon
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
domain, t2 ends-by mon 11am 18
task, t1 4
task, t2 2
constraint, t1 after t2
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by fri 4pm 8
task, t1 1
task, t2 1
constraint, t1 before t2
domain, t1 ends-by mon 1pm 8
domain, t2 ends-by mon 1pm 9
task, t1 1
task, t2 2
domain, t2 ends-by tue 4pm 9
task, t1 2
task, t2 4
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by thu 3pm 5
task, t1 3
task, t2 2
domain, t2 ends-by thu 4pm 20
task, t1 1
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 11am 10
task, t1 2
task, t2 3
domain, t2 wed
domain, t2 ends-by mon 12pm 13
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 ends-by tue 11am 6
task, t1 4
task, t2 1
domain, t1 ends-by tue 4pm 8
domain, t2 ends-by mon 2pm 15
task, t1 4
task, t2 2
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 3pm 6
task, t1 3
```

```
task, t2 3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 4pm 19
task, t1 1
task, t2 4
domain, t1 tue
domain, t1 ends-by fri 10am 8
domain, t2 ends-by thu 4pm 15
task, t1 3
task, t2 2
domain, t1 ends-by fri 3pm 10
domain, t2 ends-by thu 4pm 14
task, t1 2
task, t2 2
constraint, t1 after t2
domain, t1 wed
domain, t2 ends-by thu 11am 10
task, t1 4
task, t2 1
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by fri 9am 8
task, t1 3
task, t2 2
domain, t1 ends-by mon 9am 10
domain, t2 ends-by fri 2pm 6
task, t1 1
task, t2 4
domain, t1 ends-by tue 3pm 13
domain, t2 ends-by wed 12pm 18
task, t1 4
task, t2 1
domain, t2 wed
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 4pm 19
task, t1 2
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by wed 2pm 12
domain, t2 ends-by fri 2pm 15
task, t1 2
task, t2 2
task, t1 4
task, t2 4
domain, t1 mon
domain, t1 ends-by mon 11am 12
task, t1 2
task, t2 4
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by tue 2pm 17
task, t1 2
task, t2 4
domain, t2 ends-by fri 3pm 19
task, t1 4
task, t2 4
constraint, t1 same-day t2
domain, t1 wed
task, t1 2
task, t2 1
domain, t1 thu
domain, t1 ends-by wed 1pm 11
```

```
domain, t2 ends-by mon 1pm 14
task, t1 4
task, t2 1
domain, t1 ends-by thu 1pm 8
domain, t2 ends-by tue 4pm 10
task, t1 2
task, t2 1
domain, t2 thu
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by tue 4pm 14
task, t1 2
task, t2 1
domain, t1 ends-by wed 4pm 12
task, t1 4
task, t2 1
domain, t1 ends-by mon 1pm 11
domain, t2 ends-by mon 10am 19
n=2, k=2: avg nodes = 9.6
task, t1 2
task, t2 4
constraint, t1 after t2
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by mon 11am 5
task, t1 3
task, t2 3
domain, t1 ends-by mon 1pm 5
task, t1 3
task, t2 2
domain, t1 ends-by fri 2pm 5
domain, t2 ends-by thu 12pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by mon 12pm 15
task, t1 1
task, t2 1
domain, t1 ends-by wed 9am 14
domain, t2 ends-by wed 3pm 6
task, t1 4
task, t2 3
domain, t1 ends-by tue 9am 15
domain, t2 ends-by mon 1pm 15
task, t1 2
task, t2 1
domain, t1 ends-by fri 11am 14
domain, t2 ends-by tue 3pm 14
task, t1 2
task, t2 3
domain, t1 ends-by wed 10am 5
domain, t2 ends-by fri 12pm 12
task, t1 1
task, t2 4
constraint, t1 before t2
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 12pm 9
task, t1 2
task, t2 3
constraint, t1 after t2
domain, t1 ends-by mon 12pm 10
domain, t2 ends-by thu 9am 11
```

```
task, t1 2
task, t2 3
constraint, t1 same-day t2
domain, t1 ends-by thu 12pm 20
domain, t2 ends-by tue 9am 5
task, t1 1
task, t2 1
constraint, t1 same-day t2
domain, t1 ends-by wed 3pm 14
domain, t2 ends-by thu 11am 11
task, t1 3
task, t2 2
domain, t2 ends-by mon 1pm 13
task, t1 4
task, t2 1
domain, t1 tue
domain, t1 ends-by fri 2pm 11
domain, t2 ends-by thu 11am 18
task, t1 3
task, t2 4
constraint, t1 same-day t2
domain, t2 thu
domain, t1 ends-by wed 10am 7
domain, t2 ends-by mon 10am 7
task, t1 1
task, t2 1
domain, t1 ends-by tue 9am 5
domain, t2 ends-by fri 4pm 14
task, t1 2
task, t2 2
domain, t1 ends-by tue 3pm 19
domain, t2 ends-by wed 2pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 1pm 6
domain, t2 ends-by thu 1pm 6
task, t1 2
task, t2 1
domain, t1 mon
domain, t1 ends-by fri 2pm 13
domain, t2 ends-by mon 11am 11
task, t1 4
task, t2 3
domain, t1 mon
domain, t1 ends-by mon 11am 11
domain, t2 ends-by mon 9am 7
task, t1 2
task, t2 3
domain, t2 fri
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by wed 1pm 15
task, t1 4
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by mon 9am 9
task, t1 4
task, t2 2
constraint, t1 starts-at t2
domain, t2 wed
domain, t2 ends-by fri 3pm 5
```

```
task, t1 4
task, t2 4
domain, t1 ends-by fri 12pm 13
domain, t2 ends-by wed 10am 10
task, t1 2
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 12pm 9
task, t1 3
task, t2 1
domain, t2 thu
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by wed 12pm 13
task, t1 3
task, t2 3
domain, t2 mon
domain, t1 ends-by tue 10am 8
domain, t2 ends-by tue 11am 13
task, t1 3
task, t2 3
constraint, t1 same-day t2
domain, t1 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by tue 1pm 8
task, t1 2
task, t2 2
domain, t1 mon
domain, t1 ends-by wed 10am 18
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 mon
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
domain, t2 ends-by mon 11am 18
task, t1 4
task, t2 2
constraint, t1 after t2
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by fri 4pm 8
task, t1 1
task, t2 1
constraint, t1 before t2
domain, t1 ends-by mon 1pm 8
domain, t2 ends-by mon 1pm 9
task, t1 1
task, t2 2
domain, t2 ends-by tue 4pm 9
task, t1 2
task, t2 4
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by thu 3pm 5
task, t1 3
task, t2 2
domain, t2 ends-by thu 4pm 20
task, t1 1
task, t2 1
domain, t1 tue
```

```
domain, t2 ends-by mon 11am 10
task, t1 2
task, t2 3
domain, t2 wed
domain, t2 ends-by mon 12pm 13
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 ends-by tue 11am 6
task, t1 4
task, t2 1
domain, t1 ends-by tue 4pm 8
domain, t2 ends-by mon 2pm 15
task, t1 4
task, t2 2
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 3pm 6
task, t1 3
task, t2 3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 4pm 19
task, t1 1
task, t2 4
domain, t1 tue
domain, t1 ends-by fri 10am 8
domain, t2 ends-by thu 4pm 15
task, t1 3
task, t2 2
domain, t1 ends-by fri 3pm 10
domain, t2 ends-by thu 4pm 14
task, t1 2
task, t2 2
constraint, t1 after t2
domain, t1 wed
domain, t2 ends-by thu 11am 10
task, t1 4
task, t2 1
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by fri 9am 8
task, t1 3
task, t2 2
domain, t1 ends-by mon 9am 10
domain, t2 ends-by fri 2pm 6
task, t1 1
task, t2 4
domain, t1 ends-by tue 3pm 13
domain, t2 ends-by wed 12pm 18
task, t1 4
task, t2 1
domain, t2 wed
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 4pm 19
task, t1 2
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by wed 2pm 12
domain, t2 ends-by fri 2pm 15
task, t1 2
task, t2 2
task, t1 4
```

```
task, t2 4
domain, t1 mon
domain, t1 ends-by mon 11am 12
task, t1 2
task, t2 4
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by tue 2pm 17
task, t1 2
task, t2 4
domain, t2 ends-by fri 3pm 19
task, t1 4
task, t2 4
constraint, t1 same-day t2
domain, t1 wed
task, t1 2
task, t2 1
domain, t1 thu
domain, t1 ends-by wed 1pm 11
domain, t2 ends-by mon 1pm 14
task, t1 4
task, t2 1
domain, t1 ends-by thu 1pm 8
domain, t2 ends-by tue 4pm 10
task, t1 2
task, t2 1
domain, t2 thu
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by tue 4pm 14
task, t1 2
task, t2 1
domain, t1 ends-by wed 4pm 12
task, t1 4
task, t2 1
domain, t1 ends-by mon 1pm 11
domain, t2 ends-by mon 10am 19
n=2, k=3: avg nodes = 6.9
task, t1 2
task, t2 4
constraint, t1 after t2
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by mon 11am 5
task, t1 3
task, t2 3
domain, t1 ends-by mon 1pm 5
task, t1 3
task, t2 2
domain, t1 ends-by fri 2pm 5
domain, t2 ends-by thu 12pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by mon 12pm 15
task, t1 1
task, t2 1
domain, t1 ends-by wed 9am 14
domain, t2 ends-by wed 3pm 6
task, t1 4
task, t2 3
domain, t1 ends-by tue 9am 15
domain, t2 ends-by mon 1pm 15
```

```
task, t1 2
task, t2 1
domain, t1 ends-by fri 11am 14
domain, t2 ends-by tue 3pm 14
task, t1 2
task, t2 3
domain, t1 ends-by wed 10am 5
domain, t2 ends-by fri 12pm 12
task, t1 1
task, t2 4
constraint, t1 before t2
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 12pm 9
task, t1 2
task, t2 3
constraint, t1 after t2
domain, t1 ends-by mon 12pm 10
domain, t2 ends-by thu 9am 11
task, t1 2
task, t2 3
constraint, t1 same-day t2
domain, t1 ends-by thu 12pm 20
domain, t2 ends-by tue 9am 5
task, t1 1
task, t2 1
constraint, t1 same-day t2
domain, t1 ends-by wed 3pm 14
domain, t2 ends-by thu 11am 11
task, t1 3
task, t2 2
domain, t2 ends-by mon 1pm 13
task, t1 4
task, t2 1
domain, t1 tue
domain, t1 ends-by fri 2pm 11
domain, t2 ends-by thu 11am 18
task, t1 3
task, t2 4
constraint, t1 same-day t2
domain, t2 thu
domain, t1 ends-by wed 10am 7
domain, t2 ends-by mon 10am 7
task, t1 1
task, t2 1
domain, t1 ends-by tue 9am 5
domain, t2 ends-by fri 4pm 14
task, t1 2
task, t2 2
domain, t1 ends-by tue 3pm 19
domain, t2 ends-by wed 2pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 1pm 6
domain, t2 ends-by thu 1pm 6
task, t1 2
task, t2 1
domain, t1 mon
domain, t1 ends-by fri 2pm 13
domain, t2 ends-by mon 11am 11
task, t1 4
```

```
task, t2 3
domain, t1 mon
domain, t1 ends-by mon 11am 11
domain, t2 ends-by mon 9am 7
task, t1 2
task, t2 3
domain, t2 fri
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by wed 1pm 15
task, t1 4
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by mon 9am 9
task, t1 4
task, t2 2
constraint, t1 starts-at t2
domain, t2 wed
domain, t2 ends-by fri 3pm 5
task, t1 4
task, t2 4
domain, t1 ends-by fri 12pm 13
domain, t2 ends-by wed 10am 10
task, t1 2
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 12pm 9
task, t1 3
task, t2 1
domain, t2 thu
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by wed 12pm 13
task, t1 3
task, t2 3
domain, t2 mon
domain, t1 ends-by tue 10am 8
domain, t2 ends-by tue 11am 13
task, t1 3
task, t2 3
constraint, t1 same-day t2
domain, t1 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by tue 1pm 8
task, t1 2
task, t2 2
domain, t1 mon
domain, t1 ends-by wed 10am 18
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 mon
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
domain, t2 ends-by mon 11am 18
task, t1 4
task, t2 2
constraint, t1 after t2
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by fri 4pm 8
task, t1 1
```

```
task, t2 1
constraint, t1 before t2
domain, t1 ends-by mon 1pm 8
domain, t2 ends-by mon 1pm 9
task, t1 1
task, t2 2
domain, t2 ends-by tue 4pm 9
task, t1 2
task, t2 4
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by thu 3pm 5
task, t1 3
task, t2 2
domain, t2 ends-by thu 4pm 20
task, t1 1
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 11am 10
task, t1 2
task, t2 3
domain, t2 wed
domain, t2 ends-by mon 12pm 13
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 ends-by tue 11am 6
task, t1 4
task, t2 1
domain, t1 ends-by tue 4pm 8
domain, t2 ends-by mon 2pm 15
task, t1 4
task, t2 2
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 3pm 6
task, t1 3
task, t2 3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 4pm 19
task, t1 1
task, t2 4
domain, t1 tue
domain, t1 ends-by fri 10am 8
domain, t2 ends-by thu 4pm 15
task, t1 3
task, t2 2
domain, t1 ends-by fri 3pm 10
domain, t2 ends-by thu 4pm 14
task, t1 2
task, t2 2
constraint, t1 after t2
domain, t1 wed
domain, t2 ends-by thu 11am 10
task, t1 4
task, t2 1
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by fri 9am 8
task, t1 3
task, t2 2
domain, t1 ends-by mon 9am 10
```

```
domain, t2 ends-by fri 2pm 6
task, t1 1
task, t2 4
domain, t1 ends-by tue 3pm 13
domain, t2 ends-by wed 12pm 18
task, t1 4
task, t2 1
domain, t2 wed
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 4pm 19
task, t1 2
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by wed 2pm 12
domain, t2 ends-by fri 2pm 15
task, t1 2
task, t2 2
task, t1 4
task, t2 4
domain, t1 mon
domain, t1 ends-by mon 11am 12
task, t1 2
task, t2 4
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by tue 2pm 17
task, t1 2
task, t2 4
domain, t2 ends-by fri 3pm 19
task, t1 4
task, t2 4
constraint, t1 same-day t2
domain, t1 wed
task, t1 2
task, t2 1
domain, t1 thu
domain, t1 ends-by wed 1pm 11
domain, t2 ends-by mon 1pm 14
task, t1 4
task, t2 1
domain, t1 ends-by thu 1pm 8
domain, t2 ends-by tue 4pm 10
task, t1 2
task, t2 1
domain, t2 thu
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by tue 4pm 14
task, t1 2
task, t2 1
domain, t1 ends-by wed 4pm 12
task, t1 4
task, t2 1
domain, t1 ends-by mon 1pm 11
domain, t2 ends-by mon 10am 19
n=2, k=4: avg nodes = 6.0
task, t1 2
task, t2 4
constraint, t1 after t2
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by mon 11am 5
task, t1 3
```

```
task, t2 3
domain, t1 ends-by mon 1pm 5
task, t1 3
task, t2 2
domain, t1 ends-by fri 2pm 5
domain, t2 ends-by thu 12pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by mon 12pm 15
task, t1 1
task, t2 1
domain, t1 ends-by wed 9am 14
domain, t2 ends-by wed 3pm 6
task, t1 4
task, t2 3
domain, t1 ends-by tue 9am 15
domain, t2 ends-by mon 1pm 15
task, t1 2
task, t2 1
domain, t1 ends-by fri 11am 14
domain, t2 ends-by tue 3pm 14
task, t1 2
task, t2 3
domain, t1 ends-by wed 10am 5
domain, t2 ends-by fri 12pm 12
task, t1 1
task, t2 4
constraint, t1 before t2
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 12pm 9
task, t1 2
task, t2 3
constraint, t1 after t2
domain, t1 ends-by mon 12pm 10
domain, t2 ends-by thu 9am 11
task, t1 2
task, t2 3
constraint, t1 same-day t2
domain, t1 ends-by thu 12pm 20
domain, t2 ends-by tue 9am 5
task, t1 1
task, t2 1
constraint, t1 same-day t2
domain, t1 ends-by wed 3pm 14
domain, t2 ends-by thu 11am 11
task, t1 3
task, t2 2
domain, t2 ends-by mon 1pm 13
task, t1 4
task, t2 1
domain, t1 tue
domain, t1 ends-by fri 2pm 11
domain, t2 ends-by thu 11am 18
task, t1 3
task, t2 4
constraint, t1 same-day t2
domain, t2 thu
domain, t1 ends-by wed 10am 7
domain, t2 ends-by mon 10am 7
```

```
task, t1 1
task, t2 1
domain, t1 ends-by tue 9am 5
domain, t2 ends-by fri 4pm 14
task, t1 2
task, t2 2
domain, t1 ends-by tue 3pm 19
domain, t2 ends-by wed 2pm 5
task, t1 2
task, t2 1
domain, t1 ends-by mon 1pm 6
domain, t2 ends-by thu 1pm 6
task, t1 2
task, t2 1
domain, t1 mon
domain, t1 ends-by fri 2pm 13
domain, t2 ends-by mon 11am 11
task, t1 4
task, t2 3
domain, t1 mon
domain, t1 ends-by mon 11am 11
domain, t2 ends-by mon 9am 7
task, t1 2
task, t2 3
domain, t2 fri
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by wed 1pm 15
task, t1 4
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by mon 9am 9
task, t1 4
task, t2 2
constraint, t1 starts-at t2
domain, t2 wed
domain, t2 ends-by fri 3pm 5
task, t1 4
task, t2 4
domain, t1 ends-by fri 12pm 13
domain, t2 ends-by wed 10am 10
task, t1 2
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 12pm 9
task, t1 3
task, t2 1
domain, t2 thu
domain, t1 ends-by thu 2pm 13
domain, t2 ends-by wed 12pm 13
task, t1 3
task, t2 3
domain, t2 mon
domain, t1 ends-by tue 10am 8
domain, t2 ends-by tue 11am 13
task, t1 3
task, t2 3
constraint, t1 same-day t2
domain, t1 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by tue 1pm 8
```

```
task, t1 2
task, t2 2
domain, t1 mon
domain, t1 ends-by wed 10am 18
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 mon
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
domain, t2 ends-by mon 11am 18
task, t1 4
task, t2 2
constraint, t1 after t2
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by fri 4pm 8
task, t1 1
task, t2 1
constraint, t1 before t2
domain, t1 ends-by mon 1pm 8
domain, t2 ends-by mon 1pm 9
task, t1 1
task, t2 2
domain, t2 ends-by tue 4pm 9
task, t1 2
task, t2 4
domain, t2 mon
domain, t1 ends-by mon 3pm 10
domain, t2 ends-by thu 3pm 5
task, t1 3
task, t2 2
domain, t2 ends-by thu 4pm 20
task, t1 1
task, t2 1
domain, t1 tue
domain, t2 ends-by mon 11am 10
task, t1 2
task, t2 3
domain, t2 wed
domain, t2 ends-by mon 12pm 13
task, t1 4
task, t2 4
constraint, t1 after t2
domain, t1 ends-by tue 11am 6
task, t1 4
task, t2 1
domain, t1 ends-by tue 4pm 8
domain, t2 ends-by mon 2pm 15
task, t1 4
task, t2 2
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 3pm 6
task, t1 3
task, t2 3
domain, t1 ends-by fri 4pm 7
domain, t2 ends-by mon 4pm 19
task, t1 1
task, t2 4
domain, t1 tue
```

```
domain, t1 ends-by fri 10am 8
domain, t2 ends-by thu 4pm 15
task, t1 3
task, t2 2
domain, t1 ends-by fri 3pm 10
domain, t2 ends-by thu 4pm 14
task, t1 2
task, t2 2
constraint, t1 after t2
domain, t1 wed
domain, t2 ends-by thu 11am 10
task, t1 4
task, t2 1
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by fri 9am 8
task, t1 3
task, t2 2
domain, t1 ends-by mon 9am 10
domain, t2 ends-by fri 2pm 6
task, t1 1
task, t2 4
domain, t1 ends-by tue 3pm 13
domain, t2 ends-by wed 12pm 18
task, t1 4
task, t2 1
domain, t2 wed
domain, t1 ends-by tue 3pm 10
domain, t2 ends-by mon 4pm 19
task, t1 2
task, t2 1
constraint, t1 starts-at t2
domain, t1 ends-by wed 2pm 12
domain, t2 ends-by fri 2pm 15
task, t1 2
task, t2 2
task, t1 4
task, t2 4
domain, t1 mon
domain, t1 ends-by mon 11am 12
task, t1 2
task, t2 4
domain, t1 ends-by wed 2pm 17
domain, t2 ends-by tue 2pm 17
task, t1 2
task, t2 4
domain, t2 ends-by fri 3pm 19
task, t1 4
task, t2 4
constraint, t1 same-day t2
domain, t1 wed
task, t1 2
task, t2 1
domain, t1 thu
domain, t1 ends-by wed 1pm 11
domain, t2 ends-by mon 1pm 14
task, t1 4
task, t2 1
domain, t1 ends-by thu 1pm 8
domain, t2 ends-by tue 4pm 10
task, t1 2
```

```
task, t2 1
domain, t2 thu
domain, t1 ends-by wed 4pm 12
domain, t2 ends-by tue 4pm 14
task, t1 2
task, t2 1
domain, t1 ends-by wed 4pm 12
task, t1 4
task, t2 1
domain, t1 ends-by mon 1pm 11
domain, t2 ends-by mon 10am 19
n=2, k=5: avg nodes = 5.3
task, t1 2
task, t2 4
task, t3 1
domain, t2 ends-by tue 1pm 13
domain, t3 ends-by wed 11am 13
task, t1 4
task, t2 2
task, t3 3
constraint, t1 same-day t2
constraint, t1 same-day t3
domain, t3 fri
domain, t1 ends-by mon 9am 17
domain, t2 ends-by tue 3pm 6
task, t1 2
task, t2 4
task, t3 3
domain, t1 ends-by thu 10am 18
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by fri 11am 10
task, t1 4
task, t2 2
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 17
domain, t2 ends-by fri 10am 17
task, t1 4
task, t2 2
task, t3 1
domain, t1 ends-by fri 11am 17
domain, t2 ends-by mon 9am 6
domain, t3 ends-by wed 12pm 9
task, t1 1
task, t2 2
task, t3 1
constraint, t1 after t2
domain, t2 ends-by fri 2pm 17
domain, t3 ends-by mon 9am 14
task, t1 2
task, t2 3
task, t3 4
domain, t2 thu
domain, t1 ends-by wed 9am 6
domain, t2 ends-by tue 2pm 14
domain, t3 ends-by tue 11am 17
task, t1 2
task, t2 2
task, t3 2
constraint, t1 same-day t2
```

```
constraint, t2 same-day t3
domain, t2 ends-by thu 4pm 6
task, t1 4
task, t2 4
task, t3 3
constraint, t1 before t3
domain, t1 ends-by thu 4pm 15
domain, t2 ends-by thu 2pm 5
task, t1 3
task, t2 1
task, t3 1
domain, t1 ends-by wed 9am 5
domain, t3 ends-by thu 1pm 10
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t2
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t2 thu
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by fri 11am 10
domain, t3 ends-by wed 1pm 8
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
task, t3 4
constraint, t1 after t2
constraint, t2 after t3
domain, t1 fri
domain, t2 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by wed 10am 8
domain, t3 ends-by tue 2pm 10
task, t1 4
task, t2 4
task, t3 1
domain, t1 ends-by fri 10am 13
domain, t2 ends-by wed 2pm 18
domain, t3 ends-by tue 3pm 17
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t3
domain, t1 ends-by fri 3pm 18
domain, t2 ends-by thu 2pm 12
domain, t3 ends-by thu 9am 20
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t1 ends-by fri 11am 5
domain, t2 ends-by thu 1pm 19
domain, t3 ends-by mon 2pm 11
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
constraint, t2 same-day t3
domain, t2 thu
```

```
domain, t2 ends-by thu 11am 5
task, t1 2
task, t2 2
task, t3 3
constraint, t2 after t3
domain, t2 ends-by wed 4pm 18
task, t1 3
task, t2 2
task, t3 1
domain, t1 ends-by fri 10am 5
domain, t2 ends-by fri 9am 6
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 2
domain, t1 thu
domain, t3 ends-by fri 3pm 7
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t3 tue
domain, t2 ends-by fri 4pm 5
domain, t3 ends-by wed 10am 19
task, t1 2
task, t2 2
task, t3 2
constraint, t2 before t3
domain, t3 wed
domain, t1 ends-by thu 1pm 8
task, t1 1
task, t2 2
task, t3 2
constraint, t1 after t3
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
domain, t3 thu
domain, t2 ends-by tue 1pm 19
domain, t3 ends-by wed 4pm 8
task, t1 4
task, t2 4
task, t3 2
domain, t3 tue
domain, t1 ends-by mon 4pm 19
domain, t2 ends-by wed 12pm 19
domain, t3 ends-by fri 4pm 7
task, t1 3
task, t2 3
task, t3 4
constraint, t2 before t3
domain, t1 fri
domain, t1 ends-by wed 3pm 20
domain, t3 ends-by fri 12pm 8
task, t1 2
task, t2 3
task, t3 3
```

```
domain, t2 ends-by mon 10am 7
domain, t3 ends-by wed 3pm 5
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 20
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by tue 1pm 18
task, t1 3
task, t2 4
task, t3 2
constraint, t1 after t3
domain, t2 ends-by thu 9am 12
domain, t3 ends-by mon 9am 20
task, t1 1
task, t2 4
task, t3 3
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by wed 10am 14
domain, t2 ends-by tue 2pm 20
domain, t3 ends-by wed 2pm 11
task, t1 4
task, t2 2
task, t3 3
constraint, t1 after t3
domain, t1 ends-by wed 4pm 16
domain, t2 ends-by thu 12pm 16
task, t1 2
task, t2 4
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 before t3
domain, t3 mon
domain, t2 ends-by wed 3pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t2 tue
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 4pm 19
task, t1 1
task, t2 2
task, t3 3
domain, t2 ends-by thu 9am 18
task, t1 2
task, t2 4
task, t3 2
constraint, t1 after t2
domain, t1 ends-by mon 10am 9
domain, t3 ends-by thu 1pm 18
task, t1 2
```

```
task, t2 2
task, t3 1
constraint, t2 after t3
domain, t1 ends-by tue 10am 8
domain, t2 ends-by thu 1pm 20
task, t1 4
task, t2 4
task, t3 1
domain, t3 fri
task, t1 1
task, t2 1
task, t3 2
domain, t1 ends-by wed 12pm 11
domain, t2 ends-by wed 9am 18
domain, t3 ends-by fri 4pm 5
task, t1 3
task, t2 3
task, t3 2
constraint, t1 starts-at t3
domain, t1 ends-by mon 9am 13
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 10am 9
task, t1 2
task, t2 2
task, t3 3
constraint, t1 before t2
domain, t1 fri
domain, t1 ends-by mon 9am 17
domain, t3 ends-by wed 4pm 7
task, t1 1
task, t2 3
task, t3 4
domain, t1 wed
domain, t1 ends-by wed 2pm 5
domain, t3 ends-by mon 10am 9
task, t1 2
task, t2 3
task, t3 2
constraint, t2 after t3
domain, t1 tue
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by mon 3pm 6
task, t1 4
task, t2 2
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 10
domain, t2 ends-by tue 12pm 12
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 3pm 9
domain, t2 ends-by mon 3pm 10
domain, t3 ends-by mon 12pm 5
task, t1 2
task, t2 4
task, t3 3
```

```
constraint, t1 after t2
domain, t3 fri
domain, t2 ends-by wed 2pm 7
domain, t3 ends-by tue 1pm 6
task, t1 4
task, t2 4
task, t3 1
domain, t1 fri
domain, t1 ends-by fri 1pm 15
domain, t2 ends-by thu 11am 15
domain, t3 ends-by mon 9am 7
task, t1 3
task, t2 2
task, t3 4
domain, t2 thu
domain, t1 ends-by tue 2pm 12
domain, t3 ends-by tue 10am 7
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 mon
domain, t2 tue
domain, t1 ends-by fri 12pm 9
domain, t2 ends-by wed 1pm 13
domain, t3 ends-by thu 3pm 14
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t1 ends-by thu 2pm 14
task, t1 2
task, t2 3
task, t3 4
domain, t1 ends-by thu 4pm 14
domain, t2 ends-by wed 10am 5
domain, t3 ends-by wed 3pm 5
task, t1 4
task, t2 4
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 11
domain, t2 ends-by thu 10am 13
domain, t3 ends-by tue 2pm 5
task, t1 1
task, t2 2
task, t3 2
constraint, t1 same-day t3
domain, t3 wed
domain, t1 ends-by tue 3pm 7
domain, t3 ends-by tue 12pm 20
task, t1 2
task, t2 4
task, t3 3
domain, t2 ends-by mon 10am 9
domain, t3 ends-by mon 11am 6
task, t1 2
task, t2 3
task, t3 1
```

```
constraint, t1 before t3
domain, t1 ends-by mon 1pm 17
domain, t2 ends-by wed 4pm 6
domain, t3 ends-by mon 3pm 9
task, t1 3
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 starts-at t3
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by thu 11am 12
domain, t3 ends-by thu 10am 17
task, t1 2
task, t2 1
task, t3 4
constraint, t1 same-day t3
domain, t2 wed
domain, t3 thu
domain, t2 ends-by tue 9am 17
domain, t3 ends-by mon 3pm 8
task, t1 4
task, t2 2
task, t3 4
domain, t1 ends-by mon 10am 8
domain, t2 ends-by thu 3pm 8
domain, t3 ends-by tue 1pm 5
task, t1 3
task, t2 2
task, t3 3
domain, t1 ends-by mon 11am 8
domain, t3 ends-by mon 4pm 10
task, t1 3
task, t2 4
task, t3 3
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by wed 11am 17
domain, t3 ends-by thu 12pm 14
task, t1 4
task, t2 3
task, t3 1
constraint, t1 before t2
domain, t1 ends-by tue 10am 14
domain, t2 ends-by fri 12pm 7
domain, t3 ends-by mon 9am 5
n=3, k=2: avg nodes = 13.1
task, t1 2
task, t2 4
task, t3 1
domain, t2 ends-by tue 1pm 13
domain, t3 ends-by wed 11am 13
task, t1 4
task, t2 2
task, t3 3
constraint, t1 same-day t2
constraint, t1 same-day t3
domain, t3 fri
domain, t1 ends-by mon 9am 17
domain, t2 ends-by tue 3pm 6
task, t1 2
task, t2 4
```

```
task, t3 3
domain, t1 ends-by thu 10am 18
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by fri 11am 10
task, t1 4
task, t2 2
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 17
domain, t2 ends-by fri 10am 17
task, t1 4
task, t2 2
task, t3 1
domain, t1 ends-by fri 11am 17
domain, t2 ends-by mon 9am 6
domain, t3 ends-by wed 12pm 9
task, t1 1
task, t2 2
task, t3 1
constraint, t1 after t2
domain, t2 ends-by fri 2pm 17
domain, t3 ends-by mon 9am 14
task, t1 2
task, t2 3
task, t3 4
domain, t2 thu
domain, t1 ends-by wed 9am 6
domain, t2 ends-by tue 2pm 14
domain, t3 ends-by tue 11am 17
task, t1 2
task, t2 2
task, t3 2
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t2 ends-by thu 4pm 6
task, t1 4
task, t2 4
task, t3 3
constraint, t1 before t3
domain, t1 ends-by thu 4pm 15
domain, t2 ends-by thu 2pm 5
task, t1 3
task, t2 1
task, t3 1
domain, t1 ends-by wed 9am 5
domain, t3 ends-by thu 1pm 10
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t2
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t2 thu
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by fri 11am 10
domain, t3 ends-by wed 1pm 8
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
task, t3 4
```

```
constraint, t1 after t2
constraint, t2 after t3
domain, t1 fri
domain, t2 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by wed 10am 8
domain, t3 ends-by tue 2pm 10
task, t1 4
task, t2 4
task, t3 1
domain, t1 ends-by fri 10am 13
domain, t2 ends-by wed 2pm 18
domain, t3 ends-by tue 3pm 17
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t3
domain, t1 ends-by fri 3pm 18
domain, t2 ends-by thu 2pm 12
domain, t3 ends-by thu 9am 20
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t1 ends-by fri 11am 5
domain, t2 ends-by thu 1pm 19
domain, t3 ends-by mon 2pm 11
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
constraint, t2 same-day t3
domain, t2 thu
domain, t2 ends-by thu 11am 5
task, t1 2
task, t2 2
task, t3 3
constraint, t2 after t3
domain, t2 ends-by wed 4pm 18
task, t1 3
task, t2 2
task, t3 1
domain, t1 ends-by fri 10am 5
domain, t2 ends-by fri 9am 6
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 2
domain, t1 thu
domain, t3 ends-by fri 3pm 7
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t3 tue
domain, t2 ends-by fri 4pm 5
domain, t3 ends-by wed 10am 19
task, t1 2
task, t2 2
task, t3 2
```

constraint, t2 before t3
domain, t3 wed
domain, t1 ends-by thu 1pm 8
task, t1 1
task, t2 2
task, t3 2
constraint, t1 after t3
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
domain, t3 thu
domain, t2 ends-by tue 1pm 19
domain, t3 ends-by wed 4pm 8
task, t1 4
task, t2 4
task, t3 2
domain, t3 tue
domain, t1 ends-by mon 4pm 19
domain, t2 ends-by wed 12pm 19
domain, t3 ends-by fri 4pm 7
task, t1 3
task, t2 3
task, t3 4
constraint, t2 before t3
domain, t1 fri
domain, t1 ends-by wed 3pm 20
domain, t3 ends-by fri 12pm 8
task, t1 2
task, t2 3
task, t3 3
domain, t2 ends-by mon 10am 7
domain, t3 ends-by wed 3pm 5
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 20
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by tue 1pm 18
task, t1 3
task, t2 4
task, t3 2
constraint, t1 after t3
domain, t2 ends-by thu 9am 12
domain, t3 ends-by mon 9am 20
task, t1 1
task, t2 4
task, t3 3
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by wed 10am 14
domain, t2 ends-by tue 2pm 20

```
domain, t3 ends-by wed 2pm 11
task, t1 4
task, t2 2
task, t3 3
constraint, t1 after t3
domain, t1 ends-by wed 4pm 16
domain, t2 ends-by thu 12pm 16
task, t1 2
task, t2 4
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 before t3
domain, t3 mon
domain, t2 ends-by wed 3pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t2 tue
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 4pm 19
task, t1 1
task, t2 2
task, t3 3
domain, t2 ends-by thu 9am 18
task, t1 2
task, t2 4
task, t3 2
constraint, t1 after t2
domain, t1 ends-by mon 10am 9
domain, t3 ends-by thu 1pm 18
task, t1 2
task, t2 2
task, t3 1
constraint, t2 after t3
domain, t1 ends-by tue 10am 8
domain, t2 ends-by thu 1pm 20
task, t1 4
task, t2 4
task, t3 1
domain, t3 fri
task, t1 1
task, t2 1
task, t3 2
domain, t1 ends-by wed 12pm 11
domain, t2 ends-by wed 9am 18
domain, t3 ends-by fri 4pm 5
task, t1 3
task, t2 3
task, t3 2
constraint, t1 starts-at t3
domain, t1 ends-by mon 9am 13
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 10am 9
task, t1 2
task, t2 2
task, t3 3
constraint, t1 before t2
domain, t1 fri
```

```
domain, t1 ends-by mon 9am 17
domain, t3 ends-by wed 4pm 7
task, t1 1
task, t2 3
task, t3 4
domain, t1 wed
domain, t1 ends-by wed 2pm 5
domain, t3 ends-by mon 10am 9
task, t1 2
task, t2 3
task, t3 2
constraint, t2 after t3
domain, t1 tue
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by mon 3pm 6
task, t1 4
task, t2 2
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 10
domain, t2 ends-by tue 12pm 12
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 3pm 9
domain, t2 ends-by mon 3pm 10
domain, t3 ends-by mon 12pm 5
task, t1 2
task, t2 4
task, t3 3
constraint, t1 after t2
domain, t3 fri
domain, t2 ends-by wed 2pm 7
domain, t3 ends-by tue 1pm 6
task, t1 4
task, t2 4
task, t3 1
domain, t1 fri
domain, t1 ends-by fri 1pm 15
domain, t2 ends-by thu 11am 15
domain, t3 ends-by mon 9am 7
task, t1 3
task, t2 2
task, t3 4
domain, t2 thu
domain, t1 ends-by tue 2pm 12
domain, t3 ends-by tue 10am 7
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 mon
domain, t2 tue
domain, t1 ends-by fri 12pm 9
domain, t2 ends-by wed 1pm 13
domain, t3 ends-by thu 3pm 14
```

```
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t1 ends-by thu 2pm 14
task, t1 2
task, t2 3
task, t3 4
domain, t1 ends-by thu 4pm 14
domain, t2 ends-by wed 10am 5
domain, t3 ends-by wed 3pm 5
task, t1 4
task, t2 4
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 11
domain, t2 ends-by thu 10am 13
domain, t3 ends-by tue 2pm 5
task, t1 1
task, t2 2
task, t3 2
constraint, t1 same-day t3
domain, t3 wed
domain, t1 ends-by tue 3pm 7
domain, t3 ends-by tue 12pm 20
task, t1 2
task, t2 4
task, t3 3
domain, t2 ends-by mon 10am 9
domain, t3 ends-by mon 11am 6
task, t1 2
task, t2 3
task, t3 1
constraint, t1 before t3
domain, t1 ends-by mon 1pm 17
domain, t2 ends-by wed 4pm 6
domain, t3 ends-by mon 3pm 9
task, t1 3
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 starts-at t3
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by thu 11am 12
domain, t3 ends-by thu 10am 17
task, t1 2
task, t2 1
task, t3 4
constraint, t1 same-day t3
domain, t2 wed
domain, t3 thu
domain, t2 ends-by tue 9am 17
domain, t3 ends-by mon 3pm 8
task, t1 4
task, t2 2
task, t3 4
domain, t1 ends-by mon 10am 8
domain, t2 ends-by thu 3pm 8
domain, t3 ends-by tue 1pm 5
task, t1 3
```

```
task, t2 2
task, t3 3
domain, t1 ends-by mon 11am 8
domain, t3 ends-by mon 4pm 10
task, t1 3
task, t2 4
task, t3 3
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by wed 11am 17
domain, t3 ends-by thu 12pm 14
task, t1 4
task, t2 3
task, t3 1
constraint, t1 before t2
domain, t1 ends-by tue 10am 14
domain, t2 ends-by fri 12pm 7
domain, t3 ends-by mon 9am 5
n=3, k=3: avg nodes = 9.1
task, t1 2
task, t2 4
task, t3 1
domain, t2 ends-by tue 1pm 13
domain, t3 ends-by wed 11am 13
task, t1 4
task, t2 2
task, t3 3
constraint, t1 same-day t2
constraint, t1 same-day t3
domain, t3 fri
domain, t1 ends-by mon 9am 17
domain, t2 ends-by tue 3pm 6
task, t1 2
task, t2 4
task, t3 3
domain, t1 ends-by thu 10am 18
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by fri 11am 10
task, t1 4
task, t2 2
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 17
domain, t2 ends-by fri 10am 17
task, t1 4
task, t2 2
task, t3 1
domain, t1 ends-by fri 11am 17
domain, t2 ends-by mon 9am 6
domain, t3 ends-by wed 12pm 9
task, t1 1
task, t2 2
task, t3 1
constraint, t1 after t2
domain, t2 ends-by fri 2pm 17
domain, t3 ends-by mon 9am 14
task, t1 2
task, t2 3
task, t3 4
domain, t2 thu
domain, t1 ends-by wed 9am 6
```

```
domain, t2 ends-by tue 2pm 14
domain, t3 ends-by tue 11am 17
task, t1 2
task, t2 2
task, t3 2
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t2 ends-by thu 4pm 6
task, t1 4
task, t2 4
task, t3 3
constraint, t1 before t3
domain, t1 ends-by thu 4pm 15
domain, t2 ends-by thu 2pm 5
task, t1 3
task, t2 1
task, t3 1
domain, t1 ends-by wed 9am 5
domain, t3 ends-by thu 1pm 10
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t2
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t2 thu
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by fri 11am 10
domain, t3 ends-by wed 1pm 8
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
task, t3 4
constraint, t1 after t2
constraint, t2 after t3
domain, t1 fri
domain, t2 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by wed 10am 8
domain, t3 ends-by tue 2pm 10
task, t1 4
task, t2 4
task, t3 1
domain, t1 ends-by fri 10am 13
domain, t2 ends-by wed 2pm 18
domain, t3 ends-by tue 3pm 17
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t3
domain, t1 ends-by fri 3pm 18
domain, t2 ends-by thu 2pm 12
domain, t3 ends-by thu 9am 20
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t1 ends-by fri 11am 5
domain, t2 ends-by thu 1pm 19
domain, t3 ends-by mon 2pm 11
```

```
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
constraint, t2 same-day t3
domain, t2 thu
domain, t2 ends-by thu 11am 5
task, t1 2
task, t2 2
task, t3 3
constraint, t2 after t3
domain, t2 ends-by wed 4pm 18
task, t1 3
task, t2 2
task, t3 1
domain, t1 ends-by fri 10am 5
domain, t2 ends-by fri 9am 6
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 2
domain, t1 thu
domain, t3 ends-by fri 3pm 7
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t3 tue
domain, t2 ends-by fri 4pm 5
domain, t3 ends-by wed 10am 19
task, t1 2
task, t2 2
task, t3 2
constraint, t2 before t3
domain, t3 wed
domain, t1 ends-by thu 1pm 8
task, t1 1
task, t2 2
task, t3 2
constraint, t1 after t3
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
domain, t3 thu
domain, t2 ends-by tue 1pm 19
domain, t3 ends-by wed 4pm 8
task, t1 4
task, t2 4
task, t3 2
domain, t3 tue
domain, t1 ends-by mon 4pm 19
domain, t2 ends-by wed 12pm 19
domain, t3 ends-by fri 4pm 7
task, t1 3
task, t2 3
task, t3 4
constraint, t2 before t3
```

```
domain, t1 fri
domain, t1 ends-by wed 3pm 20
domain, t3 ends-by fri 12pm 8
task, t1 2
task, t2 3
task, t3 3
domain, t2 ends-by mon 10am 7
domain, t3 ends-by wed 3pm 5
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 20
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by tue 1pm 18
task, t1 3
task, t2 4
task, t3 2
constraint, t1 after t3
domain, t2 ends-by thu 9am 12
domain, t3 ends-by mon 9am 20
task, t1 1
task, t2 4
task, t3 3
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by wed 10am 14
domain, t2 ends-by tue 2pm 20
domain, t3 ends-by wed 2pm 11
task, t1 4
task, t2 2
task, t3 3
constraint, t1 after t3
domain, t1 ends-by wed 4pm 16
domain, t2 ends-by thu 12pm 16
task, t1 2
task, t2 4
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 before t3
domain, t3 mon
domain, t2 ends-by wed 3pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t2 tue
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 4pm 19
task, t1 1
task, t2 2
task, t3 3
domain, t2 ends-by thu 9am 18
task, t1 2
```

```
task, t2 4
task, t3 2
constraint, t1 after t2
domain, t1 ends-by mon 10am 9
domain, t3 ends-by thu 1pm 18
task, t1 2
task, t2 2
task, t3 1
constraint, t2 after t3
domain, t1 ends-by tue 10am 8
domain, t2 ends-by thu 1pm 20
task, t1 4
task, t2 4
task, t3 1
domain, t3 fri
task, t1 1
task, t2 1
task, t3 2
domain, t1 ends-by wed 12pm 11
domain, t2 ends-by wed 9am 18
domain, t3 ends-by fri 4pm 5
task, t1 3
task, t2 3
task, t3 2
constraint, t1 starts-at t3
domain, t1 ends-by mon 9am 13
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 10am 9
task, t1 2
task, t2 2
task, t3 3
constraint, t1 before t2
domain, t1 fri
domain, t1 ends-by mon 9am 17
domain, t3 ends-by wed 4pm 7
task, t1 1
task, t2 3
task, t3 4
domain, t1 wed
domain, t1 ends-by wed 2pm 5
domain, t3 ends-by mon 10am 9
task, t1 2
task, t2 3
task, t3 2
constraint, t2 after t3
domain, t1 tue
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by mon 3pm 6
task, t1 4
task, t2 2
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 10
domain, t2 ends-by tue 12pm 12
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t2
constraint, t2 same-day t3
```

```
domain, t1 ends-by thu 3pm 9
domain, t2 ends-by mon 3pm 10
domain, t3 ends-by mon 12pm 5
task, t1 2
task, t2 4
task, t3 3
constraint, t1 after t2
domain, t3 fri
domain, t2 ends-by wed 2pm 7
domain, t3 ends-by tue 1pm 6
task, t1 4
task, t2 4
task, t3 1
domain, t1 fri
domain, t1 ends-by fri 1pm 15
domain, t2 ends-by thu 11am 15
domain, t3 ends-by mon 9am 7
task, t1 3
task, t2 2
task, t3 4
domain, t2 thu
domain, t1 ends-by tue 2pm 12
domain, t3 ends-by tue 10am 7
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 mon
domain, t2 tue
domain, t1 ends-by fri 12pm 9
domain, t2 ends-by wed 1pm 13
domain, t3 ends-by thu 3pm 14
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t1 ends-by thu 2pm 14
task, t1 2
task, t2 3
task, t3 4
domain, t1 ends-by thu 4pm 14
domain, t2 ends-by wed 10am 5
domain, t3 ends-by wed 3pm 5
task, t1 4
task, t2 4
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 11
domain, t2 ends-by thu 10am 13
domain, t3 ends-by tue 2pm 5
task, t1 1
task, t2 2
task, t3 2
constraint, t1 same-day t3
domain, t3 wed
domain, t1 ends-by tue 3pm 7
domain, t3 ends-by tue 12pm 20
task, t1 2
task, t2 4
```

```
task, t3 3
domain, t2 ends-by mon 10am 9
domain, t3 ends-by mon 11am 6
task, t1 2
task, t2 3
task, t3 1
constraint, t1 before t3
domain, t1 ends-by mon 1pm 17
domain, t2 ends-by wed 4pm 6
domain, t3 ends-by mon 3pm 9
task, t1 3
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 starts-at t3
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by thu 11am 12
domain, t3 ends-by thu 10am 17
task, t1 2
task, t2 1
task, t3 4
constraint, t1 same-day t3
domain, t2 wed
domain, t3 thu
domain, t2 ends-by tue 9am 17
domain, t3 ends-by mon 3pm 8
task, t1 4
task, t2 2
task, t3 4
domain, t1 ends-by mon 10am 8
domain, t2 ends-by thu 3pm 8
domain, t3 ends-by tue 1pm 5
task, t1 3
task, t2 2
task, t3 3
domain, t1 ends-by mon 11am 8
domain, t3 ends-by mon 4pm 10
task, t1 3
task, t2 4
task, t3 3
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by wed 11am 17
domain, t3 ends-by thu 12pm 14
task, t1 4
task, t2 3
task, t3 1
constraint, t1 before t2
domain, t1 ends-by tue 10am 14
domain, t2 ends-by fri 12pm 7
domain, t3 ends-by mon 9am 5
n=3, k=4: avg nodes = 8.1
task, t1 2
task, t2 4
task, t3 1
domain, t2 ends-by tue 1pm 13
domain, t3 ends-by wed 11am 13
task, t1 4
task, t2 2
task, t3 3
constraint, t1 same-day t2
```

constraint, t1 same-day t3
domain, t3 fri
domain, t1 ends-by mon 9am 17
domain, t2 ends-by tue 3pm 6
task, t1 2
task, t2 4
task, t3 3
domain, t1 ends-by thu 10am 18
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by fri 11am 10
task, t1 4
task, t2 2
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 17
domain, t2 ends-by fri 10am 17
task, t1 4
task, t2 2
task, t3 1
domain, t1 ends-by fri 11am 17
domain, t2 ends-by mon 9am 6
domain, t3 ends-by wed 12pm 9
task, t1 1
task, t2 2
task, t3 1
constraint, t1 after t2
domain, t2 ends-by fri 2pm 17
domain, t3 ends-by mon 9am 14
task, t1 2
task, t2 3
task, t3 4
domain, t2 thu
domain, t1 ends-by wed 9am 6
domain, t2 ends-by tue 2pm 14
domain, t3 ends-by tue 11am 17
task, t1 2
task, t2 2
task, t3 2
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t2 ends-by thu 4pm 6
task, t1 4
task, t2 4
task, t3 3
constraint, t1 before t3
domain, t1 ends-by thu 4pm 15
domain, t2 ends-by thu 2pm 5
task, t1 3
task, t2 1
task, t3 1
domain, t1 ends-by wed 9am 5
domain, t3 ends-by thu 1pm 10
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t2
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t2 thu
domain, t1 ends-by mon 2pm 10

```
domain, t2 ends-by fri 11am 10
domain, t3 ends-by wed 1pm 8
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 1
task, t3 4
constraint, t1 after t2
constraint, t2 after t3
domain, t1 fri
domain, t2 wed
domain, t1 ends-by wed 4pm 11
domain, t2 ends-by wed 10am 8
domain, t3 ends-by tue 2pm 10
task, t1 4
task, t2 4
task, t3 1
domain, t1 ends-by fri 10am 13
domain, t2 ends-by wed 2pm 18
domain, t3 ends-by tue 3pm 17
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t3
domain, t1 ends-by fri 3pm 18
domain, t2 ends-by thu 2pm 12
domain, t3 ends-by thu 9am 20
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
domain, t1 ends-by fri 11am 5
domain, t2 ends-by thu 1pm 19
domain, t3 ends-by mon 2pm 11
task, t1 2
task, t2 3
task, t3 4
constraint, t1 before t3
constraint, t2 same-day t3
domain, t2 thu
domain, t2 ends-by thu 11am 5
task, t1 2
task, t2 2
task, t3 3
constraint, t2 after t3
domain, t2 ends-by wed 4pm 18
task, t1 3
task, t2 2
task, t3 1
domain, t1 ends-by fri 10am 5
domain, t2 ends-by fri 9am 6
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 2
domain, t1 thu
domain, t3 ends-by fri 3pm 7
task, t1 1
task, t2 1
task, t3 1
constraint, t1 after t3
```

```
domain, t3 tue
domain, t2 ends-by fri 4pm 5
domain, t3 ends-by wed 10am 19
task, t1 2
task, t2 2
task, t3 2
constraint, t2 before t3
domain, t3 wed
domain, t1 ends-by thu 1pm 8
task, t1 1
task, t2 2
task, t3 2
constraint, t1 after t3
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
domain, t3 thu
domain, t2 ends-by tue 1pm 19
domain, t3 ends-by wed 4pm 8
task, t1 4
task, t2 4
task, t3 2
domain, t3 tue
domain, t1 ends-by mon 4pm 19
domain, t2 ends-by wed 12pm 19
domain, t3 ends-by fri 4pm 7
task, t1 3
task, t2 3
task, t3 4
constraint, t2 before t3
domain, t1 fri
domain, t1 ends-by wed 3pm 20
domain, t3 ends-by fri 12pm 8
task, t1 2
task, t2 3
task, t3 3
domain, t2 ends-by mon 10am 7
domain, t3 ends-by wed 3pm 5
task, t1 2
task, t2 1
task, t3 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 20
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
domain, t1 ends-by thu 12pm 15
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by tue 1pm 18
task, t1 3
task, t2 4
task, t3 2
constraint, t1 after t3
domain, t2 ends-by thu 9am 12
domain, t3 ends-by mon 9am 20
task, t1 1
```

```
task, t2 4
task, t3 3
constraint, t1 same-day t2
domain, t2 mon
domain, t1 ends-by wed 10am 14
domain, t2 ends-by tue 2pm 20
domain, t3 ends-by wed 2pm 11
task, t1 4
task, t2 2
task, t3 3
constraint, t1 after t3
domain, t1 ends-by wed 4pm 16
domain, t2 ends-by thu 12pm 16
task, t1 2
task, t2 4
task, t3 2
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 before t3
domain, t3 mon
domain, t2 ends-by wed 3pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t2 tue
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 4pm 19
task, t1 1
task, t2 2
task, t3 3
domain, t2 ends-by thu 9am 18
task, t1 2
task, t2 4
task, t3 2
constraint, t1 after t2
domain, t1 ends-by mon 10am 9
domain, t3 ends-by thu 1pm 18
task, t1 2
task, t2 2
task, t3 1
constraint, t2 after t3
domain, t1 ends-by tue 10am 8
domain, t2 ends-by thu 1pm 20
task, t1 4
task, t2 4
task, t3 1
domain, t3 fri
task, t1 1
task, t2 1
task, t3 2
domain, t1 ends-by wed 12pm 11
domain, t2 ends-by wed 9am 18
domain, t3 ends-by fri 4pm 5
task, t1 3
task, t2 3
task, t3 2
constraint, t1 starts-at t3
domain, t1 ends-by mon 9am 13
domain, t2 ends-by mon 1pm 15
```

```
domain, t3 ends-by tue 10am 9
task, t1 2
task, t2 2
task, t3 3
constraint, t1 before t2
domain, t1 fri
domain, t1 ends-by mon 9am 17
domain, t3 ends-by wed 4pm 7
task, t1 1
task, t2 3
task, t3 4
domain, t1 wed
domain, t1 ends-by wed 2pm 5
domain, t3 ends-by mon 10am 9
task, t1 2
task, t2 3
task, t3 2
constraint, t2 after t3
domain, t1 tue
domain, t1 ends-by wed 1pm 13
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by mon 3pm 6
task, t1 4
task, t2 2
task, t3 1
constraint, t1 before t3
domain, t1 ends-by fri 11am 10
domain, t2 ends-by tue 12pm 12
task, t1 4
task, t2 1
task, t3 1
constraint, t1 same-day t2
constraint, t2 same-day t3
domain, t1 ends-by thu 3pm 9
domain, t2 ends-by mon 3pm 10
domain, t3 ends-by mon 12pm 5
task, t1 2
task, t2 4
task, t3 3
constraint, t1 after t2
domain, t3 fri
domain, t2 ends-by wed 2pm 7
domain, t3 ends-by tue 1pm 6
task, t1 4
task, t2 4
task, t3 1
domain, t1 fri
domain, t1 ends-by fri 1pm 15
domain, t2 ends-by thu 11am 15
domain, t3 ends-by mon 9am 7
task, t1 3
task, t2 2
task, t3 4
domain, t2 thu
domain, t1 ends-by tue 2pm 12
domain, t3 ends-by tue 10am 7
task, t1 3
task, t2 3
task, t3 1
constraint, t1 after t2
```

```
constraint, t1 same-day t3
domain, t1 mon
domain, t2 tue
domain, t1 ends-by fri 12pm 9
domain, t2 ends-by wed 1pm 13
domain, t3 ends-by thu 3pm 14
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
domain, t1 ends-by thu 2pm 14
task, t1 2
task, t2 3
task, t3 4
domain, t1 ends-by thu 4pm 14
domain, t2 ends-by wed 10am 5
domain, t3 ends-by wed 3pm 5
task, t1 4
task, t2 4
task, t3 4
constraint, t1 before t2
domain, t1 ends-by thu 3pm 11
domain, t2 ends-by thu 10am 13
domain, t3 ends-by tue 2pm 5
task, t1 1
task, t2 2
task, t3 2
constraint, t1 same-day t3
domain, t3 wed
domain, t1 ends-by tue 3pm 7
domain, t3 ends-by tue 12pm 20
task, t1 2
task, t2 4
task, t3 3
domain, t2 ends-by mon 10am 9
domain, t3 ends-by mon 11am 6
task, t1 2
task, t2 3
task, t3 1
constraint, t1 before t3
domain, t1 ends-by mon 1pm 17
domain, t2 ends-by wed 4pm 6
domain, t3 ends-by mon 3pm 9
task, t1 3
task, t2 1
task, t3 1
constraint, t1 same-day t3
constraint, t2 starts-at t3
domain, t1 ends-by thu 12pm 17
domain, t2 ends-by thu 11am 12
domain, t3 ends-by thu 10am 17
task, t1 2
task, t2 1
task, t3 4
constraint, t1 same-day t3
domain, t2 wed
domain, t3 thu
domain, t2 ends-by tue 9am 17
domain, t3 ends-by mon 3pm 8
task, t1 4
```

```
task, t2 2
task, t3 4
domain, t1 ends-by mon 10am 8
domain, t2 ends-by thu 3pm 8
domain, t3 ends-by tue 1pm 5
task, t1 3
task, t2 2
task, t3 3
domain, t1 ends-by mon 11am 8
domain, t3 ends-by mon 4pm 10
task, t1 3
task, t2 4
task, t3 3
domain, t1 ends-by fri 4pm 11
domain, t2 ends-by wed 11am 17
domain, t3 ends-by thu 12pm 14
task, t1 4
task, t2 3
task, t3 1
constraint, t1 before t2
domain, t1 ends-by tue 10am 14
domain, t2 ends-by fri 12pm 7
domain, t3 ends-by mon 9am 5
n=3, k=5: avg nodes = 6.9
task, t1 4
task, t2 1
task, t3 2
task, t4 4
constraint, t1 before t2
domain, t1 ends-by tue 9am 17
domain, t2 ends-by tue 4pm 18
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by wed 4pm 7
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 same-day t3
constraint, t3 same-day t4
domain, t1 tue
domain, t2 tue
domain, t1 ends-by fri 3pm 20
domain, t3 ends-by mon 11am 6
task, t1 4
task, t2 3
task, t3 2
task, t4 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 same-day t4
domain, t4 fri
domain, t1 ends-by fri 10am 20
domain, t2 ends-by thu 1pm 18
domain, t4 ends-by thu 9am 20
task, t1 2
task, t2 3
task, t3 2
task, t4 3
constraint, t1 before t3
domain, t3 thu
```

```
domain, t1 ends-by fri 10am 20
domain, t3 ends-by thu 11am 18
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t2 before t4
domain, t1 ends-by thu 3pm 10
domain, t2 ends-by fri 12pm 10
domain, t3 ends-by wed 10am 17
domain, t4 ends-by wed 2pm 17
task, t1 1
task, t2 1
task, t3 2
task, t4 1
constraint, t1 starts-at t4
domain, t1 ends-by wed 2pm 5
domain, t2 ends-by thu 10am 18
domain, t3 ends-by thu 12pm 13
domain, t4 ends-by tue 3pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t2
constraint, t1 before t4
domain, t3 tue
domain, t4 thu
domain, t1 ends-by tue 10am 12
domain, t2 ends-by thu 11am 14
domain, t3 ends-by thu 10am 19
domain, t4 ends-by mon 1pm 5
task, t1 1
task, t2 2
task, t3 3
task, t4 1
constraint, t2 before t4
constraint, t3 before t4
domain, t2 thu
domain, t2 ends-by fri 10am 6
domain, t3 ends-by tue 1pm 15
domain, t4 ends-by thu 10am 10
task, t1 1
task, t2 2
task, t3 3
task, t4 4
constraint, t1 same-day t2
domain, t4 thu
domain, t1 ends-by wed 12pm 20
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by mon 12pm 13
domain, t4 ends-by mon 2pm 16
task, t1 3
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t2
constraint, t1 before t3
constraint, t3 same-day t4
domain, t2 ends-by fri 1pm 12
```

```
domain, t3 ends-by tue 10am 19
domain, t4 ends-by tue 4pm 17
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t3 thu
domain, t4 thu
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 4pm 5
task, t1 1
task, t2 4
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t2 after t3
domain, t3 mon
domain, t4 wed
domain, t2 ends-by wed 12pm 13
domain, t4 ends-by mon 11am 11
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 10am 16
domain, t2 ends-by mon 12pm 15
domain, t3 ends-by mon 4pm 13
domain, t4 ends-by tue 11am 20
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t2 before t4
domain, t1 wed
domain, t3 fri
domain, t4 tue
domain, t1 ends-by thu 10am 13
domain, t2 ends-by thu 9am 19
domain, t3 ends-by mon 11am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 after t3
constraint, t1 after t4
domain, t2 fri
domain, t1 ends-by thu 12pm 10
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 3pm 17
domain, t4 ends-by fri 10am 6
task, t1 1
task, t2 3
task, t3 3
```

```
task, t4 1
constraint, t1 same-day t2
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by wed 10am 6
task, t1 1
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t4
domain, t1 tue
domain, t1 ends-by tue 10am 14
domain, t2 ends-by thu 4pm 5
domain, t3 ends-by mon 2pm 9
domain, t4 ends-by fri 11am 9
task, t1 3
task, t2 4
task, t3 3
task, t4 2
constraint, t3 before t4
domain, t2 wed
domain, t2 ends-by thu 4pm 15
domain, t4 ends-by fri 4pm 12
task, t1 3
task, t2 1
task, t3 2
task, t4 3
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 tue
domain, t2 thu
domain, t3 tue
domain, t1 ends-by mon 10am 8
domain, t2 ends-by fri 1pm 8
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 9am 7
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 3
task, t4 3
constraint, t3 before t4
domain, t2 fri
domain, t1 ends-by mon 1pm 19
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t2
constraint, t2 same-day t3
constraint, t2 before t4
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by fri 3pm 8
domain, t3 ends-by fri 4pm 13
domain, t4 ends-by thu 4pm 11
```

```
task, t1 4
task, t2 3
task, t3 1
task, t4 2
constraint, t2 after t3
constraint, t2 before t4
domain, t2 fri
domain, t1 ends-by thu 11am 14
domain, t2 ends-by fri 10am 10
domain, t3 ends-by thu 11am 6
domain, t4 ends-by fri 1pm 14
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 starts-at t4
constraint, t3 after t4
domain, t2 wed
domain, t1 ends-by wed 1pm 20
domain, t2 ends-by thu 10am 14
domain, t3 ends-by tue 12pm 13
domain, t4 ends-by tue 12pm 6
task, t1 2
task, t2 1
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 before t4
domain, t1 ends-by fri 12pm 16
domain, t2 ends-by fri 11am 12
domain, t4 ends-by mon 12pm 20
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 4
constraint, t2 after t3
domain, t3 thu
domain, t1 ends-by thu 4pm 20
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 3pm 15
domain, t4 ends-by mon 9am 14
task, t1 2
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t3 after t4
domain, t1 ends-by thu 10am 17
domain, t2 ends-by wed 12pm 7
domain, t4 ends-by thu 9am 14
task, t1 2
task, t2 1
task, t3 4
task, t4 3
```

```
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t1 ends-by wed 11am 14
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by wed 4pm 19
domain, t4 ends-by fri 11am 20
task, t1 4
task, t2 2
task, t3 4
task, t4 1
constraint, t1 after t2
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by tue 9am 5
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 18
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 1
task, t4 3
constraint, t1 starts-at t4
domain, t2 fri
domain, t1 ends-by fri 11am 13
domain, t3 ends-by thu 9am 9
task, t1 4
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by tue 9am 16
domain, t2 ends-by tue 4pm 8
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 4pm 18
task, t1 3
task, t2 3
task, t3 3
task, t4 3
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 after t4
domain, t2 thu
domain, t3 mon
domain, t1 ends-by fri 2pm 10
domain, t2 ends-by wed 11am 6
domain, t3 ends-by tue 12pm 16
task, t1 3
task, t2 4
task, t3 3
task, t4 3
domain, t1 tue
domain, t2 fri
domain, t1 ends-by tue 1pm 16
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 2pm 17
```

```
task, t1 4
task, t2 2
task, t3 2
task, t4 4
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by thu 11am 8
domain, t4 ends-by wed 1pm 16
task, t1 3
task, t2 4
task, t3 4
task, t4 2
constraint, t1 before t4
constraint, t2 before t3
domain, t1 ends-by thu 4pm 8
domain, t3 ends-by wed 2pm 20
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 before t3
constraint, t2 starts-at t4
domain, t4 wed
domain, t1 ends-by fri 4pm 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by mon 1pm 8
domain, t4 ends-by fri 10am 9
task, t1 1
task, t2 2
task, t3 4
task, t4 1
constraint, t3 same-day t4
domain, t1 tue
domain, t4 mon
domain, t1 ends-by wed 9am 10
domain, t3 ends-by tue 1pm 7
domain, t4 ends-by wed 2pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
constraint, t1 after t2
constraint, t1 same-day t3
constraint, t2 after t4
constraint, t3 after t4
domain, t1 ends-by wed 1pm 12
domain, t2 ends-by thu 1pm 11
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 12pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 1
constraint, t1 before t4
constraint, t3 after t4
domain, t1 ends-by mon 4pm 8
domain, t2 ends-by fri 2pm 15
domain, t3 ends-by wed 11am 15
domain, t4 ends-by thu 9am 8
task, t1 4
```

```
task, t2 3
task, t3 2
task, t4 3
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t2 after t4
domain, t3 thu
domain, t1 ends-by wed 2pm 7
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by mon 12pm 12
domain, t4 ends-by fri 4pm 10
task, t1 1
task, t2 4
task, t3 2
task, t4 2
domain, t1 wed
domain, t2 fri
domain, t2 ends-by fri 1pm 10
domain, t3 ends-by mon 10am 11
domain, t4 ends-by mon 10am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 2
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 9am 14
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by thu 9am 6
task, t1 3
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 same-day t4
domain, t1 ends-by mon 11am 20
domain, t2 ends-by wed 1pm 20
domain, t3 ends-by thu 1pm 14
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t4
domain, t2 mon
domain, t3 thu
domain, t1 ends-by mon 10am 13
domain, t3 ends-by fri 1pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
domain, t1 ends-by wed 9am 19
domain, t2 ends-by fri 4pm 15
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t1 wed
```

```
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 15
domain, t4 ends-by thu 2pm 5
task, t1 4
task, t2 3
task, t3 1
task, t4 4
constraint, t1 same-day t4
constraint, t2 starts-at t3
domain, t1 ends-by wed 2pm 10
domain, t2 ends-by thu 9am 5
domain, t4 ends-by fri 1pm 20
task, t1 3
task, t2 2
task, t3 3
task, t4 1
domain, t2 wed
domain, t4 ends-by mon 2pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
constraint, t2 same-day t4
domain, t1 ends-by thu 12pm 16
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 4pm 5
domain, t4 ends-by wed 3pm 10
task, t1 1
task, t2 3
task, t3 4
task, t4 4
constraint, t2 before t4
domain, t3 fri
domain, t2 ends-by mon 9am 12
domain, t3 ends-by fri 11am 17
domain, t4 ends-by mon 3pm 18
task, t1 4
task, t2 2
task, t3 3
task, t4 2
constraint, t1 starts-at t2
domain, t1 ends-by mon 10am 12
domain, t3 ends-by wed 2pm 6
task, t1 1
task, t2 3
task, t3 1
task, t4 1
constraint, t1 after t3
constraint, t2 before t4
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 9am 15
domain, t3 ends-by mon 3pm 9
domain, t4 ends-by thu 11am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 19
domain, t4 ends-by tue 3pm 20
```

```
task, t1 4
task, t2 4
task, t3 4
task, t4 4
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by tue 12pm 10
domain, t4 ends-by fri 2pm 11
task, t1 4
task, t2 1
task, t3 1
task, t4 3
constraint, t1 after t4
domain, t1 ends-by thu 11am 6
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by wed 9am 6
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 after t4
domain, t1 ends-by thu 10am 9
domain, t3 ends-by thu 2pm 16
domain, t4 ends-by mon 10am 15
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t4 thu
domain, t1 ends-by thu 9am 7
domain, t2 ends-by mon 4pm 17
domain, t3 ends-by fri 4pm 14
domain, t4 ends-by thu 11am 7
task, t1 3
task, t2 3
task, t3 1
task, t4 2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 ends-by tue 12pm 12
domain, t2 ends-by tue 11am 5
domain, t3 ends-by mon 3pm 10
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t3
constraint, t2 after t3
constraint, t2 after t4
domain, t2 ends-by fri 12pm 17
task, t1 3
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t4
```

```
constraint, t3 before t4
domain, t1 wed
domain, t2 ends-by wed 1pm 6
domain, t3 ends-by tue 2pm 14
domain, t4 ends-by tue 11am 6
n=4, k=2: avg nodes = 15.1
task, t1 4
task, t2 1
task, t3 2
task, t4 4
constraint, t1 before t2
domain, t1 ends-by tue 9am 17
domain, t2 ends-by tue 4pm 18
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by wed 4pm 7
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 same-day t3
constraint, t3 same-day t4
domain, t1 tue
domain, t2 tue
domain, t1 ends-by fri 3pm 20
domain, t3 ends-by mon 11am 6
task, t1 4
task, t2 3
task, t3 2
task, t4 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 same-day t4
domain, t4 fri
domain, t1 ends-by fri 10am 20
domain, t2 ends-by thu 1pm 18
domain, t4 ends-by thu 9am 20
task, t1 2
task, t2 3
task, t3 2
task, t4 3
constraint, t1 before t3
domain, t3 thu
domain, t1 ends-by fri 10am 20
domain, t3 ends-by thu 11am 18
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t2 before t4
domain, t1 ends-by thu 3pm 10
domain, t2 ends-by fri 12pm 10
domain, t3 ends-by wed 10am 17
domain, t4 ends-by wed 2pm 17
task, t1 1
task, t2 1
task, t3 2
task, t4 1
constraint, t1 starts-at t4
domain, t1 ends-by wed 2pm 5
domain, t2 ends-by thu 10am 18
```

```
domain, t3 ends-by thu 12pm 13
domain, t4 ends-by tue 3pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t2
constraint, t1 before t4
domain, t3 tue
domain, t4 thu
domain, t1 ends-by tue 10am 12
domain, t2 ends-by thu 11am 14
domain, t3 ends-by thu 10am 19
domain, t4 ends-by mon 1pm 5
task, t1 1
task, t2 2
task, t3 3
task, t4 1
constraint, t2 before t4
constraint, t3 before t4
domain, t2 thu
domain, t2 ends-by fri 10am 6
domain, t3 ends-by tue 1pm 15
domain, t4 ends-by thu 10am 10
task, t1 1
task, t2 2
task, t3 3
task, t4 4
constraint, t1 same-day t2
domain, t4 thu
domain, t1 ends-by wed 12pm 20
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by mon 12pm 13
domain, t4 ends-by mon 2pm 16
task, t1 3
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t2
constraint, t1 before t3
constraint, t3 same-day t4
domain, t2 ends-by fri 1pm 12
domain, t3 ends-by tue 10am 19
domain, t4 ends-by tue 4pm 17
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t3 thu
domain, t4 thu
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 4pm 5
task, t1 1
task, t2 4
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t2 after t3
domain, t3 mon
domain, t4 wed
```

```
domain, t2 ends-by wed 12pm 13
domain, t4 ends-by mon 11am 11
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 10am 16
domain, t2 ends-by mon 12pm 15
domain, t3 ends-by mon 4pm 13
domain, t4 ends-by tue 11am 20
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t2 before t4
domain, t1 wed
domain, t3 fri
domain, t4 tue
domain, t1 ends-by thu 10am 13
domain, t2 ends-by thu 9am 19
domain, t3 ends-by mon 11am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 after t3
constraint, t1 after t4
domain, t2 fri
domain, t1 ends-by thu 12pm 10
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 3pm 17
domain, t4 ends-by fri 10am 6
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 same-day t2
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by wed 10am 6
task, t1 1
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t4
domain, t1 tue
domain, t1 ends-by tue 10am 14
domain, t2 ends-by thu 4pm 5
domain, t3 ends-by mon 2pm 9
domain, t4 ends-by fri 11am 9
```

```
task, t1 3
task, t2 4
task, t3 3
task, t4 2
constraint, t3 before t4
domain, t2 wed
domain, t2 ends-by thu 4pm 15
domain, t4 ends-by fri 4pm 12
task, t1 3
task, t2 1
task, t3 2
task, t4 3
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 tue
domain, t2 thu
domain, t3 tue
domain, t1 ends-by mon 10am 8
domain, t2 ends-by fri 1pm 8
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 9am 7
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 3
task, t4 3
constraint, t3 before t4
domain, t2 fri
domain, t1 ends-by mon 1pm 19
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t2
constraint, t2 same-day t3
constraint, t2 before t4
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by fri 3pm 8
domain, t3 ends-by fri 4pm 13
domain, t4 ends-by thu 4pm 11
task, t1 4
task, t2 3
task, t3 1
task, t4 2
constraint, t2 after t3
constraint, t2 before t4
domain, t2 fri
domain, t1 ends-by thu 11am 14
domain, t2 ends-by fri 10am 10
domain, t3 ends-by thu 11am 6
domain, t4 ends-by fri 1pm 14
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 starts-at t4
```

```
constraint, t3 after t4
domain, t2 wed
domain, t1 ends-by wed 1pm 20
domain, t2 ends-by thu 10am 14
domain, t3 ends-by tue 12pm 13
domain, t4 ends-by tue 12pm 6
task, t1 2
task, t2 1
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 before t4
domain, t1 ends-by fri 12pm 16
domain, t2 ends-by fri 11am 12
domain, t4 ends-by mon 12pm 20
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 4
constraint, t2 after t3
domain, t3 thu
domain, t1 ends-by thu 4pm 20
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 3pm 15
domain, t4 ends-by mon 9am 14
task, t1 2
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t3 after t4
domain, t1 ends-by thu 10am 17
domain, t2 ends-by wed 12pm 7
domain, t4 ends-by thu 9am 14
task, t1 2
task, t2 1
task, t3 4
task, t4 3
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t1 ends-by wed 11am 14
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by wed 4pm 19
domain, t4 ends-by fri 11am 20
task, t1 4
task, t2 2
task, t3 4
task, t4 1
constraint, t1 after t2
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by tue 9am 5
task, t1 4
task, t2 3
```

```
task, t3 2
task, t4 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 18
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 1
task, t4 3
constraint, t1 starts-at t4
domain, t2 fri
domain, t1 ends-by fri 11am 13
domain, t3 ends-by thu 9am 9
task, t1 4
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by tue 9am 16
domain, t2 ends-by tue 4pm 8
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 4pm 18
task, t1 3
task, t2 3
task, t3 3
task, t4 3
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 after t4
domain, t2 thu
domain, t3 mon
domain, t1 ends-by fri 2pm 10
domain, t2 ends-by wed 11am 6
domain, t3 ends-by tue 12pm 16
task, t1 3
task, t2 4
task, t3 3
task, t4 3
domain, t1 tue
domain, t2 fri
domain, t1 ends-by tue 1pm 16
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 2pm 17
task, t1 4
task, t2 2
task, t3 2
task, t4 4
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by thu 11am 8
domain, t4 ends-by wed 1pm 16
task, t1 3
task, t2 4
task, t3 4
task, t4 2
constraint, t1 before t4
constraint, t2 before t3
domain, t1 ends-by thu 4pm 8
domain, t3 ends-by wed 2pm 20
task, t1 4
task, t2 2
```

```
task, t3 1
task, t4 4
constraint, t2 before t3
constraint, t2 starts-at t4
domain, t4 wed
domain, t1 ends-by fri 4pm 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by mon 1pm 8
domain, t4 ends-by fri 10am 9
task, t1 1
task, t2 2
task, t3 4
task, t4 1
constraint, t3 same-day t4
domain, t1 tue
domain, t4 mon
domain, t1 ends-by wed 9am 10
domain, t3 ends-by tue 1pm 7
domain, t4 ends-by wed 2pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
constraint, t1 after t2
constraint, t1 same-day t3
constraint, t2 after t4
constraint, t3 after t4
domain, t1 ends-by wed 1pm 12
domain, t2 ends-by thu 1pm 11
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 12pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 1
constraint, t1 before t4
constraint, t3 after t4
domain, t1 ends-by mon 4pm 8
domain, t2 ends-by fri 2pm 15
domain, t3 ends-by wed 11am 15
domain, t4 ends-by thu 9am 8
task, t1 4
task, t2 3
task, t3 2
task, t4 3
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t2 after t4
domain, t3 thu
domain, t1 ends-by wed 2pm 7
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by mon 12pm 12
domain, t4 ends-by fri 4pm 10
task, t1 1
task, t2 4
task, t3 2
task, t4 2
domain, t1 wed
domain, t2 fri
domain, t2 ends-by fri 1pm 10
```

```
domain, t3 ends-by mon 10am 11
domain, t4 ends-by mon 10am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 2
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 9am 14
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by thu 9am 6
task, t1 3
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 same-day t4
domain, t1 ends-by mon 11am 20
domain, t2 ends-by wed 1pm 20
domain, t3 ends-by thu 1pm 14
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t4
domain, t2 mon
domain, t3 thu
domain, t1 ends-by mon 10am 13
domain, t3 ends-by fri 1pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
domain, t1 ends-by wed 9am 19
domain, t2 ends-by fri 4pm 15
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t1 wed
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 15
domain, t4 ends-by thu 2pm 5
task, t1 4
task, t2 3
task, t3 1
task, t4 4
constraint, t1 same-day t4
constraint, t2 starts-at t3
domain, t1 ends-by wed 2pm 10
domain, t2 ends-by thu 9am 5
domain, t4 ends-by fri 1pm 20
task, t1 3
task, t2 2
task, t3 3
task, t4 1
domain, t2 wed
domain, t4 ends-by mon 2pm 14
```

```
task, t1 3
task, t2 2
task, t3 4
task, t4 2
constraint, t2 same-day t4
domain, t1 ends-by thu 12pm 16
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 4pm 5
domain, t4 ends-by wed 3pm 10
task, t1 1
task, t2 3
task, t3 4
task, t4 4
constraint, t2 before t4
domain, t3 fri
domain, t2 ends-by mon 9am 12
domain, t3 ends-by fri 11am 17
domain, t4 ends-by mon 3pm 18
task, t1 4
task, t2 2
task, t3 3
task, t4 2
constraint, t1 starts-at t2
domain, t1 ends-by mon 10am 12
domain, t3 ends-by wed 2pm 6
task, t1 1
task, t2 3
task, t3 1
task, t4 1
constraint, t1 after t3
constraint, t2 before t4
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 9am 15
domain, t3 ends-by mon 3pm 9
domain, t4 ends-by thu 11am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 19
domain, t4 ends-by tue 3pm 20
task, t1 4
task, t2 4
task, t3 4
task, t4 4
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by tue 12pm 10
domain, t4 ends-by fri 2pm 11
task, t1 4
task, t2 1
task, t3 1
task, t4 3
constraint, t1 after t4
domain, t1 ends-by thu 11am 6
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by wed 9am 6
```

```
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 after t4
domain, t1 ends-by thu 10am 9
domain, t3 ends-by thu 2pm 16
domain, t4 ends-by mon 10am 15
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t4 thu
domain, t1 ends-by thu 9am 7
domain, t2 ends-by mon 4pm 17
domain, t3 ends-by fri 4pm 14
domain, t4 ends-by thu 11am 7
task, t1 3
task, t2 3
task, t3 1
task, t4 2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 ends-by tue 12pm 12
domain, t2 ends-by tue 11am 5
domain, t3 ends-by mon 3pm 10
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t3
constraint, t2 after t3
constraint, t2 after t4
domain, t2 ends-by fri 12pm 17
task, t1 3
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 wed
domain, t2 ends-by wed 1pm 6
domain, t3 ends-by tue 2pm 14
domain, t4 ends-by tue 11am 6
n=4, k=3: avg nodes = 10.5
task, t1 4
task, t2 1
task, t3 2
task, t4 4
constraint, t1 before t2
domain, t1 ends-by tue 9am 17
domain, t2 ends-by tue 4pm 18
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by wed 4pm 7
task, t1 3
task, t2 4
task, t3 3
```

```
task, t4 3
constraint, t2 same-day t3
constraint, t3 same-day t4
domain, t1 tue
domain, t2 tue
domain, t1 ends-by fri 3pm 20
domain, t3 ends-by mon 11am 6
task, t1 4
task, t2 3
task, t3 2
task, t4 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 same-day t4
domain, t4 fri
domain, t1 ends-by fri 10am 20
domain, t2 ends-by thu 1pm 18
domain, t4 ends-by thu 9am 20
task, t1 2
task, t2 3
task, t3 2
task, t4 3
constraint, t1 before t3
domain, t3 thu
domain, t1 ends-by fri 10am 20
domain, t3 ends-by thu 11am 18
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t2 before t4
domain, t1 ends-by thu 3pm 10
domain, t2 ends-by fri 12pm 10
domain, t3 ends-by wed 10am 17
domain, t4 ends-by wed 2pm 17
task, t1 1
task, t2 1
task, t3 2
task, t4 1
constraint, t1 starts-at t4
domain, t1 ends-by wed 2pm 5
domain, t2 ends-by thu 10am 18
domain, t3 ends-by thu 12pm 13
domain, t4 ends-by tue 3pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t2
constraint, t1 before t4
domain, t3 tue
domain, t4 thu
domain, t1 ends-by tue 10am 12
domain, t2 ends-by thu 11am 14
domain, t3 ends-by thu 10am 19
domain, t4 ends-by mon 1pm 5
task, t1 1
task, t2 2
task, t3 3
task, t4 1
```

```
constraint, t2 before t4
constraint, t3 before t4
domain, t2 thu
domain, t2 ends-by fri 10am 6
domain, t3 ends-by tue 1pm 15
domain, t4 ends-by thu 10am 10
task, t1 1
task, t2 2
task, t3 3
task, t4 4
constraint, t1 same-day t2
domain, t4 thu
domain, t1 ends-by wed 12pm 20
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by mon 12pm 13
domain, t4 ends-by mon 2pm 16
task, t1 3
task, t2 1
task, t3 1
task, t4 4
constraint, t1 starts-at t2
constraint, t1 before t3
constraint, t3 same-day t4
domain, t2 ends-by fri 1pm 12
domain, t3 ends-by tue 10am 19
domain, t4 ends-by tue 4pm 17
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t3 thu
domain, t4 thu
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 4pm 5
task, t1 1
task, t2 4
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t2 after t3
domain, t3 mon
domain, t4 wed
domain, t2 ends-by wed 12pm 13
domain, t4 ends-by mon 11am 11
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 10am 16
domain, t2 ends-by mon 12pm 15
domain, t3 ends-by mon 4pm 13
domain, t4 ends-by tue 11am 20
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t3
```

```
constraint, t1 before t4
constraint, t2 before t4
domain, t1 wed
domain, t3 fri
domain, t4 tue
domain, t1 ends-by thu 10am 13
domain, t2 ends-by thu 9am 19
domain, t3 ends-by mon 11am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 after t3
constraint, t1 after t4
domain, t2 fri
domain, t1 ends-by thu 12pm 10
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 3pm 17
domain, t4 ends-by fri 10am 6
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 same-day t2
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by wed 10am 6
task, t1 1
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t4
domain, t1 tue
domain, t1 ends-by tue 10am 14
domain, t2 ends-by thu 4pm 5
domain, t3 ends-by mon 2pm 9
domain, t4 ends-by fri 11am 9
task, t1 3
task, t2 4
task, t3 3
task, t4 2
constraint, t3 before t4
domain, t2 wed
domain, t2 ends-by thu 4pm 15
domain, t4 ends-by fri 4pm 12
task, t1 3
task, t2 1
task, t3 2
task, t4 3
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 tue
domain, t2 thu
domain, t3 tue
domain, t1 ends-by mon 10am 8
```

```
domain, t2 ends-by fri 1pm 8
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 9am 7
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 3
task, t4 3
constraint, t3 before t4
domain, t2 fri
domain, t1 ends-by mon 1pm 19
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t2
constraint, t2 same-day t3
constraint, t2 before t4
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by fri 3pm 8
domain, t3 ends-by fri 4pm 13
domain, t4 ends-by thu 4pm 11
task, t1 4
task, t2 3
task, t3 1
task, t4 2
constraint, t2 after t3
constraint, t2 before t4
domain, t2 fri
domain, t1 ends-by thu 11am 14
domain, t2 ends-by fri 10am 10
domain, t3 ends-by thu 11am 6
domain, t4 ends-by fri 1pm 14
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 starts-at t4
constraint, t3 after t4
domain, t2 wed
domain, t1 ends-by wed 1pm 20
domain, t2 ends-by thu 10am 14
domain, t3 ends-by tue 12pm 13
domain, t4 ends-by tue 12pm 6
task, t1 2
task, t2 1
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 before t4
domain, t1 ends-by fri 12pm 16
domain, t2 ends-by fri 11am 12
domain, t4 ends-by mon 12pm 20
No (more) solutions. Total of 1 paths expanded.
```

```
task, t1 4
task, t2 3
task, t3 4
task, t4 4
constraint, t2 after t3
domain, t3 thu
domain, t1 ends-by thu 4pm 20
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 3pm 15
domain, t4 ends-by mon 9am 14
task, t1 2
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t3 after t4
domain, t1 ends-by thu 10am 17
domain, t2 ends-by wed 12pm 7
domain, t4 ends-by thu 9am 14
task, t1 2
task, t2 1
task, t3 4
task, t4 3
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t1 ends-by wed 11am 14
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by wed 4pm 19
domain, t4 ends-by fri 11am 20
task, t1 4
task, t2 2
task, t3 4
task, t4 1
constraint, t1 after t2
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by tue 9am 5
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 18
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 1
task, t4 3
constraint, t1 starts-at t4
domain, t2 fri
domain, t1 ends-by fri 11am 13
domain, t3 ends-by thu 9am 9
task, t1 4
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by tue 9am 16
```

```
domain, t2 ends-by tue 4pm 8
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 4pm 18
task, t1 3
task, t2 3
task, t3 3
task, t4 3
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 after t4
domain, t2 thu
domain, t3 mon
domain, t1 ends-by fri 2pm 10
domain, t2 ends-by wed 11am 6
domain, t3 ends-by tue 12pm 16
task, t1 3
task, t2 4
task, t3 3
task, t4 3
domain, t1 tue
domain, t2 fri
domain, t1 ends-by tue 1pm 16
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 2pm 17
task, t1 4
task, t2 2
task, t3 2
task, t4 4
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by thu 11am 8
domain, t4 ends-by wed 1pm 16
task, t1 3
task, t2 4
task, t3 4
task, t4 2
constraint, t1 before t4
constraint, t2 before t3
domain, t1 ends-by thu 4pm 8
domain, t3 ends-by wed 2pm 20
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 before t3
constraint, t2 starts-at t4
domain, t4 wed
domain, t1 ends-by fri 4pm 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by mon 1pm 8
domain, t4 ends-by fri 10am 9
task, t1 1
task, t2 2
task, t3 4
task, t4 1
constraint, t3 same-day t4
domain, t1 tue
domain, t4 mon
domain, t1 ends-by wed 9am 10
domain, t3 ends-by tue 1pm 7
```

```
domain, t4 ends-by wed 2pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
constraint, t1 after t2
constraint, t1 same-day t3
constraint, t2 after t4
constraint, t3 after t4
domain, t1 ends-by wed 1pm 12
domain, t2 ends-by thu 1pm 11
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 12pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 1
constraint, t1 before t4
constraint, t3 after t4
domain, t1 ends-by mon 4pm 8
domain, t2 ends-by fri 2pm 15
domain, t3 ends-by wed 11am 15
domain, t4 ends-by thu 9am 8
task, t1 4
task, t2 3
task, t3 2
task, t4 3
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t2 after t4
domain, t3 thu
domain, t1 ends-by wed 2pm 7
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by mon 12pm 12
domain, t4 ends-by fri 4pm 10
task, t1 1
task, t2 4
task, t3 2
task, t4 2
domain, t1 wed
domain, t2 fri
domain, t2 ends-by fri 1pm 10
domain, t3 ends-by mon 10am 11
domain, t4 ends-by mon 10am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 2
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 9am 14
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by thu 9am 6
task, t1 3
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 before t3
```

constraint, t2 same-day t4
domain, t1 ends-by mon 11am 20
domain, t2 ends-by wed 1pm 20
domain, t3 ends-by thu 1pm 14
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t4
domain, t2 mon
domain, t3 thu
domain, t1 ends-by mon 10am 13
domain, t3 ends-by fri 1pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
domain, t1 ends-by wed 9am 19
domain, t2 ends-by fri 4pm 15
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t1 wed
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 15
domain, t4 ends-by thu 2pm 5
task, t1 4
task, t2 3
task, t3 1
task, t4 4
constraint, t1 same-day t4
constraint, t2 starts-at t3
domain, t1 ends-by wed 2pm 10
domain, t2 ends-by thu 9am 5
domain, t4 ends-by fri 1pm 20
task, t1 3
task, t2 2
task, t3 3
task, t4 1
domain, t2 wed
domain, t4 ends-by mon 2pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
constraint, t2 same-day t4
domain, t1 ends-by thu 12pm 16
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 4pm 5
domain, t4 ends-by wed 3pm 10
task, t1 1
task, t2 3
task, t3 4
task, t4 4
constraint, t2 before t4
domain, t3 fri
domain, t2 ends-by mon 9am 12
domain, t3 ends-by fri 11am 17
domain, t4 ends-by mon 3pm 18

```
task, t1 4
task, t2 2
task, t3 3
task, t4 2
constraint, t1 starts-at t2
domain, t1 ends-by mon 10am 12
domain, t3 ends-by wed 2pm 6
task, t1 1
task, t2 3
task, t3 1
task, t4 1
constraint, t1 after t3
constraint, t2 before t4
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 9am 15
domain, t3 ends-by mon 3pm 9
domain, t4 ends-by thu 11am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 19
domain, t4 ends-by tue 3pm 20
task, t1 4
task, t2 4
task, t3 4
task, t4 4
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by tue 12pm 10
domain, t4 ends-by fri 2pm 11
task, t1 4
task, t2 1
task, t3 1
task, t4 3
constraint, t1 after t4
domain, t1 ends-by thu 11am 6
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by wed 9am 6
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 after t4
domain, t1 ends-by thu 10am 9
domain, t3 ends-by thu 2pm 16
domain, t4 ends-by mon 10am 15
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t4 thu
domain, t1 ends-by thu 9am 7
domain, t2 ends-by mon 4pm 17
domain, t3 ends-by fri 4pm 14
```

```
domain, t4 ends-by thu 11am 7
task, t1 3
task, t2 3
task, t3 1
task, t4 2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 ends-by tue 12pm 12
domain, t2 ends-by tue 11am 5
domain, t3 ends-by mon 3pm 10
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t3
constraint, t2 after t3
constraint, t2 after t4
domain, t2 ends-by fri 12pm 17
task, t1 3
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 wed
domain, t2 ends-by wed 1pm 6
domain, t3 ends-by tue 2pm 14
domain, t4 ends-by tue 11am 6
n=4, k=4: avg nodes = 9.2
task, t1 4
task, t2 1
task, t3 2
task, t4 4
constraint, t1 before t2
domain, t1 ends-by tue 9am 17
domain, t2 ends-by tue 4pm 18
domain, t3 ends-by fri 3pm 5
domain, t4 ends-by wed 4pm 7
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 same-day t3
constraint, t3 same-day t4
domain, t1 tue
domain, t2 tue
domain, t1 ends-by fri 3pm 20
domain, t3 ends-by mon 11am 6
task, t1 4
task, t2 3
task, t3 2
task, t4 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 same-day t4
domain, t4 fri
domain, t1 ends-by fri 10am 20
domain, t2 ends-by thu 1pm 18
domain, t4 ends-by thu 9am 20
```

```
task, t1 2
task, t2 3
task, t3 2
task, t4 3
constraint, t1 before t3
domain, t3 thu
domain, t1 ends-by fri 10am 20
domain, t3 ends-by thu 11am 18
task, t1 1
task, t2 3
task, t3 3
task, t4 2
constraint, t2 before t4
domain, t1 ends-by thu 3pm 10
domain, t2 ends-by fri 12pm 10
domain, t3 ends-by wed 10am 17
domain, t4 ends-by wed 2pm 17
task, t1 1
task, t2 1
task, t3 2
task, t4 1
constraint, t1 starts-at t4
domain, t1 ends-by wed 2pm 5
domain, t2 ends-by thu 10am 18
domain, t3 ends-by thu 12pm 13
domain, t4 ends-by tue 3pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t2
constraint, t1 before t4
domain, t3 tue
domain, t4 thu
domain, t1 ends-by tue 10am 12
domain, t2 ends-by thu 11am 14
domain, t3 ends-by thu 10am 19
domain, t4 ends-by mon 1pm 5
task, t1 1
task, t2 2
task, t3 3
task, t4 1
constraint, t2 before t4
constraint, t3 before t4
domain, t2 thu
domain, t2 ends-by fri 10am 6
domain, t3 ends-by tue 1pm 15
domain, t4 ends-by thu 10am 10
task, t1 1
task, t2 2
task, t3 3
task, t4 4
constraint, t1 same-day t2
domain, t4 thu
domain, t1 ends-by wed 12pm 20
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by mon 12pm 13
domain, t4 ends-by mon 2pm 16
task, t1 3
task, t2 1
```

```
task, t3 1
task, t4 4
constraint, t1 starts-at t2
constraint, t1 before t3
constraint, t3 same-day t4
domain, t2 ends-by fri 1pm 12
domain, t3 ends-by tue 10am 19
domain, t4 ends-by tue 4pm 17
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t3 thu
domain, t4 thu
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 4pm 5
task, t1 1
task, t2 4
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t2 after t3
domain, t3 mon
domain, t4 wed
domain, t2 ends-by wed 12pm 13
domain, t4 ends-by mon 11am 11
task, t1 3
task, t2 4
task, t3 3
task, t4 3
constraint, t2 after t4
constraint, t3 after t4
domain, t2 tue
domain, t1 ends-by wed 10am 16
domain, t2 ends-by mon 12pm 15
domain, t3 ends-by mon 4pm 13
domain, t4 ends-by tue 11am 20
task, t1 1
task, t2 3
task, t3 4
task, t4 1
constraint, t1 same-day t3
constraint, t1 before t4
constraint, t2 before t4
domain, t1 wed
domain, t3 fri
domain, t4 tue
domain, t1 ends-by thu 10am 13
domain, t2 ends-by thu 9am 19
domain, t3 ends-by mon 11am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 2
task, t4 2
constraint, t1 after t2
constraint, t1 after t3
constraint, t1 after t4
domain, t2 fri
domain, t1 ends-by thu 12pm 10
```

```
domain, t2 ends-by wed 3pm 6
domain, t3 ends-by wed 3pm 17
domain, t4 ends-by fri 10am 6
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 same-day t2
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by thu 2pm 19
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by wed 10am 6
task, t1 1
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t4
domain, t1 tue
domain, t1 ends-by tue 10am 14
domain, t2 ends-by thu 4pm 5
domain, t3 ends-by mon 2pm 9
domain, t4 ends-by fri 11am 9
task, t1 3
task, t2 4
task, t3 3
task, t4 2
constraint, t3 before t4
domain, t2 wed
domain, t2 ends-by thu 4pm 15
domain, t4 ends-by fri 4pm 12
task, t1 3
task, t2 1
task, t3 2
task, t4 3
constraint, t1 after t2
constraint, t1 same-day t3
domain, t1 tue
domain, t2 thu
domain, t3 tue
domain, t1 ends-by mon 10am 8
domain, t2 ends-by fri 1pm 8
domain, t3 ends-by wed 4pm 8
domain, t4 ends-by thu 9am 7
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 3
task, t4 3
constraint, t3 before t4
domain, t2 fri
domain, t1 ends-by mon 1pm 19
domain, t3 ends-by thu 9am 11
domain, t4 ends-by wed 12pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t2
```

```
constraint, t2 same-day t3
constraint, t2 before t4
domain, t1 ends-by mon 12pm 9
domain, t2 ends-by fri 3pm 8
domain, t3 ends-by fri 4pm 13
domain, t4 ends-by thu 4pm 11
task, t1 4
task, t2 3
task, t3 1
task, t4 2
constraint, t2 after t3
constraint, t2 before t4
domain, t2 fri
domain, t1 ends-by thu 11am 14
domain, t2 ends-by fri 10am 10
domain, t3 ends-by thu 11am 6
domain, t4 ends-by fri 1pm 14
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 same-day t4
constraint, t2 before t3
constraint, t2 starts-at t4
constraint, t3 after t4
domain, t2 wed
domain, t1 ends-by wed 1pm 20
domain, t2 ends-by thu 10am 14
domain, t3 ends-by tue 12pm 13
domain, t4 ends-by tue 12pm 6
task, t1 2
task, t2 1
task, t3 1
task, t4 1
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 before t4
constraint, t3 before t4
domain, t1 ends-by fri 12pm 16
domain, t2 ends-by fri 11am 12
domain, t4 ends-by mon 12pm 20
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 3
task, t3 4
task, t4 4
constraint, t2 after t3
domain, t3 thu
domain, t1 ends-by thu 4pm 20
domain, t2 ends-by thu 3pm 18
domain, t3 ends-by wed 3pm 15
domain, t4 ends-by mon 9am 14
task, t1 2
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t3 after t4
domain, t1 ends-by thu 10am 17
```

```
domain, t2 ends-by wed 12pm 7
domain, t4 ends-by thu 9am 14
task, t1 2
task, t2 1
task, t3 4
task, t4 3
constraint, t1 starts-at t3
constraint, t2 before t3
domain, t1 ends-by wed 11am 14
domain, t2 ends-by wed 3pm 18
domain, t3 ends-by wed 4pm 19
domain, t4 ends-by fri 11am 20
task, t1 4
task, t2 2
task, t3 4
task, t4 1
constraint, t1 after t2
constraint, t2 after t4
domain, t1 wed
domain, t1 ends-by tue 1pm 5
domain, t2 ends-by wed 1pm 9
domain, t3 ends-by tue 9am 5
task, t1 4
task, t2 3
task, t3 2
task, t4 2
constraint, t1 before t3
domain, t2 ends-by wed 11am 18
domain, t3 ends-by thu 11am 6
task, t1 2
task, t2 3
task, t3 1
task, t4 3
constraint, t1 starts-at t4
domain, t2 fri
domain, t1 ends-by fri 11am 13
domain, t3 ends-by thu 9am 9
task, t1 4
task, t2 2
task, t3 1
task, t4 3
domain, t1 ends-by tue 9am 16
domain, t2 ends-by tue 4pm 8
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 4pm 18
task, t1 3
task, t2 3
task, t3 3
task, t4 3
constraint, t1 before t2
constraint, t1 after t4
constraint, t2 after t4
domain, t2 thu
domain, t3 mon
domain, t1 ends-by fri 2pm 10
domain, t2 ends-by wed 11am 6
domain, t3 ends-by tue 12pm 16
task, t1 3
task, t2 4
task, t3 3
```

```
task, t4 3
domain, t1 tue
domain, t2 fri
domain, t1 ends-by tue 1pm 16
domain, t2 ends-by tue 2pm 15
domain, t3 ends-by fri 2pm 17
task, t1 4
task, t2 2
task, t3 2
task, t4 4
domain, t1 ends-by fri 9am 14
domain, t2 ends-by mon 3pm 11
domain, t3 ends-by thu 11am 8
domain, t4 ends-by wed 1pm 16
task, t1 3
task, t2 4
task, t3 4
task, t4 2
constraint, t1 before t4
constraint, t2 before t3
domain, t1 ends-by thu 4pm 8
domain, t3 ends-by wed 2pm 20
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 before t3
constraint, t2 starts-at t4
domain, t4 wed
domain, t1 ends-by fri 4pm 15
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by mon 1pm 8
domain, t4 ends-by fri 10am 9
task, t1 1
task, t2 2
task, t3 4
task, t4 1
constraint, t3 same-day t4
domain, t1 tue
domain, t4 mon
domain, t1 ends-by wed 9am 10
domain, t3 ends-by tue 1pm 7
domain, t4 ends-by wed 2pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
constraint, t1 after t2
constraint, t1 same-day t3
constraint, t2 after t4
constraint, t3 after t4
domain, t1 ends-by wed 1pm 12
domain, t2 ends-by thu 1pm 11
domain, t3 ends-by thu 4pm 17
domain, t4 ends-by tue 12pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 1
constraint, t1 before t4
```

```
constraint, t3 after t4
domain, t1 ends-by mon 4pm 8
domain, t2 ends-by fri 2pm 15
domain, t3 ends-by wed 11am 15
domain, t4 ends-by thu 9am 8
task, t1 4
task, t2 3
task, t3 2
task, t4 3
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t2 after t4
domain, t3 thu
domain, t1 ends-by wed 2pm 7
domain, t2 ends-by tue 4pm 5
domain, t3 ends-by mon 12pm 12
domain, t4 ends-by fri 4pm 10
task, t1 1
task, t2 4
task, t3 2
task, t4 2
domain, t1 wed
domain, t2 fri
domain, t2 ends-by fri 1pm 10
domain, t3 ends-by mon 10am 11
domain, t4 ends-by mon 10am 18
task, t1 4
task, t2 1
task, t3 2
task, t4 2
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 9am 14
domain, t3 ends-by fri 2pm 6
domain, t4 ends-by thu 9am 6
task, t1 3
task, t2 2
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 before t3
constraint, t2 same-day t4
domain, t1 ends-by mon 11am 20
domain, t2 ends-by wed 1pm 20
domain, t3 ends-by thu 1pm 14
task, t1 3
task, t2 1
task, t3 4
task, t4 2
constraint, t1 same-day t4
domain, t2 mon
domain, t3 thu
domain, t1 ends-by mon 10am 13
domain, t3 ends-by fri 1pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
domain, t1 ends-by wed 9am 19
```

```
domain, t2 ends-by fri 4pm 15
task, t1 3
task, t2 2
task, t3 3
task, t4 4
domain, t1 wed
domain, t2 ends-by thu 2pm 20
domain, t3 ends-by tue 4pm 15
domain, t4 ends-by thu 2pm 5
task, t1 4
task, t2 3
task, t3 1
task, t4 4
constraint, t1 same-day t4
constraint, t2 starts-at t3
domain, t1 ends-by wed 2pm 10
domain, t2 ends-by thu 9am 5
domain, t4 ends-by fri 1pm 20
task, t1 3
task, t2 2
task, t3 3
task, t4 1
domain, t2 wed
domain, t4 ends-by mon 2pm 14
task, t1 3
task, t2 2
task, t3 4
task, t4 2
constraint, t2 same-day t4
domain, t1 ends-by thu 12pm 16
domain, t2 ends-by mon 1pm 15
domain, t3 ends-by tue 4pm 5
domain, t4 ends-by wed 3pm 10
task, t1 1
task, t2 3
task, t3 4
task, t4 4
constraint, t2 before t4
domain, t3 fri
domain, t2 ends-by mon 9am 12
domain, t3 ends-by fri 11am 17
domain, t4 ends-by mon 3pm 18
task, t1 4
task, t2 2
task, t3 3
task, t4 2
constraint, t1 starts-at t2
domain, t1 ends-by mon 10am 12
domain, t3 ends-by wed 2pm 6
task, t1 1
task, t2 3
task, t3 1
task, t4 1
constraint, t1 after t3
constraint, t2 before t4
domain, t1 ends-by thu 11am 15
domain, t2 ends-by fri 9am 15
domain, t3 ends-by mon 3pm 9
domain, t4 ends-by thu 11am 18
task, t1 4
```

```
task, t2 1
task, t3 2
task, t4 3
constraint, t2 same-day t3
domain, t1 ends-by fri 3pm 19
domain, t4 ends-by tue 3pm 20
task, t1 4
task, t2 4
task, t3 4
task, t4 4
constraint, t1 same-day t3
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 15
domain, t2 ends-by tue 12pm 10
domain, t4 ends-by fri 2pm 11
task, t1 4
task, t2 1
task, t3 1
task, t4 3
constraint, t1 after t4
domain, t1 ends-by thu 11am 6
domain, t2 ends-by thu 12pm 9
domain, t3 ends-by thu 4pm 10
domain, t4 ends-by wed 9am 6
task, t1 3
task, t2 4
task, t3 2
task, t4 2
constraint, t1 before t4
constraint, t2 after t4
domain, t1 ends-by thu 10am 9
domain, t3 ends-by thu 2pm 16
domain, t4 ends-by mon 10am 15
task, t1 4
task, t2 2
task, t3 1
task, t4 4
constraint, t2 after t4
domain, t4 thu
domain, t1 ends-by thu 9am 7
domain, t2 ends-by mon 4pm 17
domain, t3 ends-by fri 4pm 14
domain, t4 ends-by thu 11am 7
task, t1 3
task, t2 3
task, t3 1
task, t4 2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 ends-by tue 12pm 12
domain, t2 ends-by tue 11am 5
domain, t3 ends-by mon 3pm 10
task, t1 1
task, t2 3
task, t3 3
task, t4 1
constraint, t1 before t3
constraint, t2 after t3
constraint, t2 after t4
domain, t2 ends-by fri 12pm 17
```

```
task, t1 3
task, t2 1
task, t3 3
task, t4 4
constraint, t1 before t2
constraint, t1 same-day t4
constraint, t3 before t4
domain, t1 wed
domain, t2 ends-by wed 1pm 6
domain, t3 ends-by tue 2pm 14
domain, t4 ends-by tue 11am 6
n=4, k=5: avg nodes = 7.8
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t2 starts-at t4
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by mon 4pm 20
domain, t4 ends-by fri 9am 16
domain, t5 ends-by fri 4pm 17
task, t1 4
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 before t4
domain, t1 ends-by wed 10am 20
domain, t3 ends-by mon 3pm 8
domain, t4 ends-by thu 1pm 18
domain, t5 ends-by wed 11am 15
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t3 same-day t4
domain, t1 ends-by tue 9am 9
domain, t2 ends-by mon 11am 15
domain, t3 ends-by mon 10am 9
domain, t4 ends-by tue 3pm 11
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t5
constraint, t2 after t5
constraint, t3 starts-at t5
domain, t1 ends-by mon 11am 11
domain, t3 ends-by fri 11am 17
domain, t4 ends-by fri 9am 16
domain, t5 ends-by tue 1pm 7
task, t1 1
```

```
task, t2 2
task, t3 3
task, t4 1
task, t5 1
constraint, t1 after t4
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t4 after t5
domain, t1 ends-by thu 12pm 8
domain, t2 ends-by thu 9am 13
domain, t3 ends-by tue 9am 17
domain, t5 ends-by thu 11am 9
task, t1 3
task, t2 2
task, t3 3
task, t4 2
task, t5 2
constraint, t4 after t5
domain, t2 tue
domain, t2 ends-by thu 9am 17
domain, t3 ends-by thu 1pm 7
domain, t4 ends-by thu 10am 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
constraint, t2 after t3
constraint, t3 after t4
domain, t1 wed
domain, t2 tue
domain, t1 ends-by wed 1pm 14
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 11
domain, t4 ends-by fri 10am 9
domain, t5 ends-by thu 2pm 17
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t2
constraint, t3 after t5
domain, t5 mon
domain, t1 ends-by thu 3pm 7
domain, t2 ends-by fri 1pm 13
domain, t3 ends-by wed 9am 11
domain, t4 ends-by wed 9am 14
domain, t5 ends-by fri 3pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
domain, t2 ends-by mon 11am 18
domain, t3 ends-by wed 1pm 12
domain, t4 ends-by thu 2pm 20
domain, t5 ends-by thu 1pm 6
task, t1 1
task, t2 2
```

```
task, t3 1
task, t4 3
task, t5 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t2 after t5
constraint, t3 after t4
domain, t2 ends-by thu 9am 12
domain, t4 ends-by mon 9am 7
domain, t5 ends-by thu 11am 16
task, t1 1
task, t2 2
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t5
constraint, t2 before t3
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by thu 2pm 10
domain, t3 ends-by fri 9am 19
domain, t4 ends-by wed 1pm 18
domain, t5 ends-by mon 9am 12
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t2 before t5
constraint, t3 after t4
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by wed 4pm 17
domain, t2 ends-by thu 11am 20
domain, t3 ends-by thu 2pm 10
domain, t4 ends-by thu 1pm 15
domain, t5 ends-by fri 9am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 before t5
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by wed 1pm 9
task, t1 2
task, t2 3
task, t3 2
task, t4 4
task, t5 2
domain, t4 thu
domain, t1 ends-by tue 12pm 16
domain, t3 ends-by thu 12pm 5
domain, t4 ends-by thu 9am 11
domain, t5 ends-by thu 11am 14
task, t1 3
```

```
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t4 after t5
domain, t2 tue
domain, t3 ends-by mon 9am 12
domain, t4 ends-by fri 10am 13
domain, t5 ends-by tue 3pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 same-day t5
domain, t1 ends-by mon 2pm 15
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by mon 12pm 16
domain, t4 ends-by tue 12pm 7
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 3
constraint, t1 after t3
constraint, t4 starts-at t5
domain, t1 ends-by wed 2pm 11
domain, t3 ends-by mon 1pm 18
domain, t4 ends-by thu 2pm 15
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 1
constraint, t2 before t4
domain, t2 ends-by wed 4pm 5
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by fri 2pm 12
task, t1 2
task, t2 2
task, t3 2
task, t4 3
task, t5 3
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 after t3
constraint, t2 before t5
constraint, t3 before t4
domain, t3 ends-by wed 9am 12
domain, t4 ends-by wed 1pm 17
domain, t5 ends-by tue 9am 12
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t2
constraint, t1 same-day t4
constraint, t2 after t4
```

```
domain, t1 ends-by wed 3pm 6
domain, t3 ends-by fri 10am 7
domain, t4 ends-by fri 12pm 18
domain, t5 ends-by fri 9am 18
task, t1 2
task, t2 3
task, t3 3
task, t4 2
task, t5 2
constraint, t1 starts-at t3
constraint, t2 after t3
constraint, t2 after t4
constraint, t3 same-day t4
constraint, t3 same-day t5
domain, t1 ends-by mon 3pm 20
domain, t2 ends-by mon 2pm 13
domain, t3 ends-by tue 12pm 13
task, t1 2
task, t2 2
task, t3 4
task, t4 4
task, t5 4
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 before t5
domain, t1 tue
domain, t4 tue
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 10am 9
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by fri 2pm 7
domain, t5 ends-by tue 2pm 17
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 1
constraint, t3 after t4
domain, t1 ends-by wed 9am 17
domain, t2 ends-by wed 3pm 8
domain, t3 ends-by mon 10am 17
domain, t4 ends-by wed 2pm 6
domain, t5 ends-by fri 10am 9
task, t1 3
task, t2 1
task, t3 4
task, t4 3
task, t5 4
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t2 same-day t5
domain, t4 fri
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 2pm 19
domain, t3 ends-by thu 9am 13
task, t1 2
task, t2 3
task, t3 2
task, t4 2
task, t5 1
```

```
constraint, t1 after t2
constraint, t1 before t4
domain, t3 fri
domain, t2 ends-by mon 3pm 11
domain, t4 ends-by mon 10am 6
domain, t5 ends-by wed 11am 10
task, t1 2
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t1 before t2
domain, t3 thu
domain, t4 thu
domain, t2 ends-by tue 11am 12
domain, t3 ends-by mon 4pm 20
domain, t4 ends-by thu 3pm 8
domain, t5 ends-by wed 4pm 17
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 3pm 6
domain, t3 ends-by mon 10am 10
domain, t5 ends-by tue 11am 13
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 12
domain, t2 ends-by thu 11am 18
domain, t3 ends-by thu 10am 11
domain, t4 ends-by thu 1pm 7
task, t1 2
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
constraint, t4 before t5
domain, t2 mon
domain, t5 tue
domain, t1 ends-by tue 3pm 6
domain, t2 ends-by tue 3pm 10
domain, t3 ends-by thu 9am 17
domain, t5 ends-by tue 1pm 19
task, t1 3
task, t2 2
task, t3 1
task, t4 2
task, t5 1
```

```
constraint, t2 same-day t4
constraint, t3 before t5
domain, t1 ends-by thu 2pm 9
domain, t2 ends-by tue 9am 19
domain, t3 ends-by wed 2pm 16
domain, t4 ends-by tue 1pm 13
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t1 before t5
constraint, t3 before t4
constraint, t4 after t5
domain, t2 wed
domain, t2 ends-by fri 2pm 12
domain, t3 ends-by tue 9am 12
domain, t5 ends-by tue 10am 13
task, t1 4
task, t2 4
task, t3 3
task, t4 4
task, t5 3
constraint, t1 starts-at t5
constraint, t2 after t3
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 after t5
domain, t5 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by fri 10am 7
domain, t3 ends-by wed 11am 11
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t3 before t5
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by thu 3pm 8
domain, t4 ends-by thu 3pm 20
domain, t5 ends-by wed 11am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 2
task, t5 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 after t4
constraint, t3 same-day t5
domain, t2 wed
domain, t4 fri
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by fri 3pm 20
```

```
domain, t3 ends-by fri 12pm 12
domain, t4 ends-by tue 1pm 15
domain, t5 ends-by tue 1pm 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 2
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t3
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 4pm 15
domain, t3 ends-by thu 11am 10
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t2
constraint, t4 after t5
domain, t2 ends-by wed 10am 17
domain, t3 ends-by mon 11am 14
domain, t5 ends-by wed 1pm 20
task, t1 4
task, t2 1
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t4
domain, t3 fri
domain, t1 ends-by mon 11am 6
domain, t2 ends-by thu 11am 8
domain, t4 ends-by tue 10am 12
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 after t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 after t5
domain, t2 ends-by fri 10am 15
domain, t3 ends-by tue 2pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 1
task, t4 4
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t4
domain, t3 tue
domain, t5 wed
```

```
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by mon 10am 6
domain, t4 ends-by wed 2pm 12
domain, t5 ends-by tue 2pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by thu 11am 14
domain, t3 ends-by tue 10am 6
domain, t4 ends-by fri 2pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 same-day t4
constraint, t1 after t5
domain, t4 mon
domain, t5 mon
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by thu 9am 19
domain, t4 ends-by fri 2pm 11
domain, t5 ends-by thu 9am 8
task, t1 1
task, t2 1
task, t3 1
task, t4 4
task, t5 3
constraint, t2 before t3
constraint, t2 same-day t4
domain, t2 ends-by wed 9am 7
domain, t3 ends-by wed 2pm 18
domain, t4 ends-by wed 1pm 5
domain, t5 ends-by fri 2pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t2 before t5
constraint, t3 before t4
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by fri 11am 19
domain, t4 ends-by wed 10am 20
domain, t5 ends-by thu 12pm 8
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 before t5
domain, t4 thu
```

```
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 12pm 7
domain, t3 ends-by fri 4pm 11
domain, t4 ends-by mon 4pm 16
domain, t5 ends-by fri 4pm 19
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t4 before t5
domain, t4 fri
domain, t1 ends-by tue 1pm 17
domain, t3 ends-by mon 11am 6
domain, t4 ends-by thu 1pm 5
domain, t5 ends-by wed 3pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t1 before t5
constraint, t2 starts-at t4
domain, t2 ends-by thu 9am 7
domain, t3 ends-by mon 3pm 6
domain, t5 ends-by thu 2pm 15
task, t1 2
task, t2 4
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t5
constraint, t3 after t4
domain, t1 thu
domain, t1 ends-by mon 1pm 19
domain, t2 ends-by fri 10am 17
domain, t3 ends-by tue 11am 20
domain, t4 ends-by mon 1pm 17
domain, t5 ends-by thu 9am 14
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 1
constraint, t1 same-day t2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t5
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 11am 13
domain, t4 ends-by tue 3pm 7
domain, t5 ends-by tue 9am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
```

```
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t1 before t2
constraint, t1 before t5
constraint, t2 same-day t5
constraint, t3 same-day t5
constraint, t4 starts-at t5
domain, t1 mon
domain, t3 wed
domain, t1 ends-by mon 2pm 13
domain, t2 ends-by fri 12pm 15
domain, t3 ends-by wed 2pm 15
domain, t4 ends-by tue 1pm 9
domain, t5 ends-by mon 12pm 6
task, t1 3
task, t2 3
task, t3 4
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 after t5
constraint, t4 same-day t5
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by thu 1pm 9
domain, t4 ends-by tue 2pm 7
domain, t5 ends-by tue 11am 8
task, t1 4
task, t2 3
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t4
constraint, t1 after t5
constraint, t2 after t5
domain, t1 ends-by mon 12pm 5
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by tue 4pm 17
domain, t4 ends-by thu 12pm 9
domain, t5 ends-by wed 10am 8
task, t1 2
task, t2 1
task, t3 4
task, t4 1
task, t5 3
constraint, t1 after t4
constraint, t4 before t5
domain, t2 wed
domain, t3 fri
domain, t1 ends-by tue 11am 20
domain, t2 ends-by tue 9am 5
domain, t3 ends-by thu 9am 9
domain, t5 ends-by mon 11am 8
task, t1 4
task, t2 4
task, t3 3
task, t4 2
task, t5 3
```

```
constraint, t1 after t3
constraint, t2 before t3
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by wed 11am 17
domain, t2 ends-by wed 2pm 6
domain, t3 ends-by fri 12pm 9
domain, t4 ends-by thu 11am 17
domain, t5 ends-by wed 4pm 11
task, t1 4
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 same-day t5
constraint, t3 starts-at t4
domain, t2 wed
domain, t4 wed
domain, t1 ends-by wed 10am 15
domain, t2 ends-by tue 9am 6
domain, t4 ends-by fri 9am 9
domain, t5 ends-by thu 10am 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 4
task, t4 2
task, t5 3
constraint, t1 same-day t5
constraint, t2 after t3
constraint, t2 starts-at t4
domain, t2 tue
domain, t1 ends-by fri 1pm 5
domain, t2 ends-by thu 10am 12
domain, t3 ends-by thu 1pm 8
domain, t4 ends-by fri 4pm 18
task, t1 1
task, t2 1
task, t3 2
task, t4 1
task, t5 3
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 same-day t4
constraint, t3 after t4
constraint, t3 same-day t5
constraint, t4 after t5
domain, t1 ends-by tue 9am 9
domain, t3 ends-by fri 3pm 7
domain, t4 ends-by mon 12pm 19
domain, t5 ends-by mon 11am 7
task, t1 2
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
```

```
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t1 ends-by mon 1pm 14
domain, t2 ends-by fri 3pm 7
domain, t3 ends-by wed 12pm 7
domain, t4 ends-by wed 12pm 15
domain, t5 ends-by tue 3pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t2 same-day t5
constraint, t3 before t5
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by thu 9am 11
domain, t4 ends-by thu 2pm 16
task, t1 1
task, t2 2
task, t3 2
task, t4 1
task, t5 4
constraint, t1 after t3
constraint, t2 before t4
constraint, t2 before t5
constraint, t4 same-day t5
domain, t1 ends-by wed 9am 6
domain, t2 ends-by mon 10am 11
domain, t3 ends-by fri 11am 16
domain, t4 ends-by mon 1pm 13
domain, t5 ends-by thu 2pm 19
task, t1 1
task, t2 4
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t3
domain, t1 ends-by tue 2pm 5
domain, t2 ends-by fri 9am 20
domain, t3 ends-by fri 10am 20
domain, t4 ends-by mon 9am 10
domain, t5 ends-by mon 3pm 19
n=5, k=2: avg nodes = 16.5
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t2 starts-at t4
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by mon 4pm 20
domain, t4 ends-by fri 9am 16
domain, t5 ends-by fri 4pm 17
```

```
task, t1 4
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 before t4
domain, t1 ends-by wed 10am 20
domain, t3 ends-by mon 3pm 8
domain, t4 ends-by thu 1pm 18
domain, t5 ends-by wed 11am 15
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t3 same-day t4
domain, t1 ends-by tue 9am 9
domain, t2 ends-by mon 11am 15
domain, t3 ends-by mon 10am 9
domain, t4 ends-by tue 3pm 11
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t5
constraint, t2 after t5
constraint, t3 starts-at t5
domain, t1 ends-by mon 11am 11
domain, t3 ends-by fri 11am 17
domain, t4 ends-by fri 9am 16
domain, t5 ends-by tue 1pm 7
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 1
constraint, t1 after t4
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t4 after t5
domain, t1 ends-by thu 12pm 8
domain, t2 ends-by thu 9am 13
domain, t3 ends-by tue 9am 17
domain, t5 ends-by thu 11am 9
task, t1 3
task, t2 2
task, t3 3
task, t4 2
task, t5 2
constraint, t4 after t5
domain, t2 tue
domain, t2 ends-by thu 9am 17
domain, t3 ends-by thu 1pm 7
domain, t4 ends-by thu 10am 10
task, t1 4
task, t2 1
```

```
task, t3 1
task, t4 3
task, t5 4
constraint, t2 after t3
constraint, t3 after t4
domain, t1 wed
domain, t2 tue
domain, t1 ends-by wed 1pm 14
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 11
domain, t4 ends-by fri 10am 9
domain, t5 ends-by thu 2pm 17
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t2
constraint, t3 after t5
domain, t5 mon
domain, t1 ends-by thu 3pm 7
domain, t2 ends-by fri 1pm 13
domain, t3 ends-by wed 9am 11
domain, t4 ends-by wed 9am 14
domain, t5 ends-by fri 3pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
domain, t2 ends-by mon 11am 18
domain, t3 ends-by wed 1pm 12
domain, t4 ends-by thu 2pm 20
domain, t5 ends-by thu 1pm 6
task, t1 1
task, t2 2
task, t3 1
task, t4 3
task, t5 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t2 after t5
constraint, t3 after t4
domain, t2 ends-by thu 9am 12
domain, t4 ends-by mon 9am 7
domain, t5 ends-by thu 11am 16
task, t1 1
task, t2 2
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t5
constraint, t2 before t3
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by thu 2pm 10
domain, t3 ends-by fri 9am 19
domain, t4 ends-by wed 1pm 18
```

```
domain, t5 ends-by mon 9am 12
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t2 before t5
constraint, t3 after t4
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by wed 4pm 17
domain, t2 ends-by thu 11am 20
domain, t3 ends-by thu 2pm 10
domain, t4 ends-by thu 1pm 15
domain, t5 ends-by fri 9am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 before t5
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by wed 1pm 9
task, t1 2
task, t2 3
task, t3 2
task, t4 4
task, t5 2
domain, t4 thu
domain, t1 ends-by tue 12pm 16
domain, t3 ends-by thu 12pm 5
domain, t4 ends-by thu 9am 11
domain, t5 ends-by thu 11am 14
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t4 after t5
domain, t2 tue
domain, t3 ends-by mon 9am 12
domain, t4 ends-by fri 10am 13
domain, t5 ends-by tue 3pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 same-day t5
domain, t1 ends-by mon 2pm 15
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by mon 12pm 16
domain, t4 ends-by tue 12pm 7
task, t1 4
task, t2 1
task, t3 4
task, t4 3
```

```
task, t5 3
constraint, t1 after t3
constraint, t4 starts-at t5
domain, t1 ends-by wed 2pm 11
domain, t3 ends-by mon 1pm 18
domain, t4 ends-by thu 2pm 15
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 1
constraint, t2 before t4
domain, t2 ends-by wed 4pm 5
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by fri 2pm 12
task, t1 2
task, t2 2
task, t3 2
task, t4 3
task, t5 3
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 after t3
constraint, t2 before t5
constraint, t3 before t4
domain, t3 ends-by wed 9am 12
domain, t4 ends-by wed 1pm 17
domain, t5 ends-by tue 9am 12
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t2
constraint, t1 same-day t4
constraint, t2 after t4
domain, t1 ends-by wed 3pm 6
domain, t3 ends-by fri 10am 7
domain, t4 ends-by fri 12pm 18
domain, t5 ends-by fri 9am 18
task, t1 2
task, t2 3
task, t3 3
task, t4 2
task, t5 2
constraint, t1 starts-at t3
constraint, t2 after t3
constraint, t2 after t4
constraint, t3 same-day t4
constraint, t3 same-day t5
domain, t1 ends-by mon 3pm 20
domain, t2 ends-by mon 2pm 13
domain, t3 ends-by tue 12pm 13
task, t1 2
task, t2 2
task, t3 4
task, t4 4
task, t5 4
constraint, t1 after t4
constraint, t2 before t3
```

```
constraint, t2 before t5
domain, t1 tue
domain, t4 tue
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 10am 9
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by fri 2pm 7
domain, t5 ends-by tue 2pm 17
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 1
constraint, t3 after t4
domain, t1 ends-by wed 9am 17
domain, t2 ends-by wed 3pm 8
domain, t3 ends-by mon 10am 17
domain, t4 ends-by wed 2pm 6
domain, t5 ends-by fri 10am 9
task, t1 3
task, t2 1
task, t3 4
task, t4 3
task, t5 4
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t2 same-day t5
domain, t4 fri
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 2pm 19
domain, t3 ends-by thu 9am 13
task, t1 2
task, t2 3
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t2
constraint, t1 before t4
domain, t3 fri
domain, t2 ends-by mon 3pm 11
domain, t4 ends-by mon 10am 6
domain, t5 ends-by wed 11am 10
task, t1 2
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t1 before t2
domain, t3 thu
domain, t4 thu
domain, t2 ends-by tue 11am 12
domain, t3 ends-by mon 4pm 20
domain, t4 ends-by thu 3pm 8
domain, t5 ends-by wed 4pm 17
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
constraint, t2 after t3
```

constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 3pm 6
domain, t3 ends-by mon 10am 10
domain, t5 ends-by tue 11am 13
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 12
domain, t2 ends-by thu 11am 18
domain, t3 ends-by thu 10am 11
domain, t4 ends-by thu 1pm 7
task, t1 2
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
constraint, t4 before t5
domain, t2 mon
domain, t5 tue
domain, t1 ends-by tue 3pm 6
domain, t2 ends-by tue 3pm 10
domain, t3 ends-by thu 9am 17
domain, t5 ends-by tue 1pm 19
task, t1 3
task, t2 2
task, t3 1
task, t4 2
task, t5 1
constraint, t2 same-day t4
constraint, t3 before t5
domain, t1 ends-by thu 2pm 9
domain, t2 ends-by tue 9am 19
domain, t3 ends-by wed 2pm 16
domain, t4 ends-by tue 1pm 13
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t1 before t5
constraint, t3 before t4
constraint, t4 after t5
domain, t2 wed
domain, t2 ends-by fri 2pm 12
domain, t3 ends-by tue 9am 12
domain, t5 ends-by tue 10am 13
task, t1 4
task, t2 4
task, t3 3
task, t4 4

```
task, t5 3
constraint, t1 starts-at t5
constraint, t2 after t3
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 after t5
domain, t5 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by fri 10am 7
domain, t3 ends-by wed 11am 11
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t3 before t5
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by thu 3pm 8
domain, t4 ends-by thu 3pm 20
domain, t5 ends-by wed 11am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 2
task, t5 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 after t4
constraint, t3 same-day t5
domain, t2 wed
domain, t4 fri
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 12pm 12
domain, t4 ends-by tue 1pm 15
domain, t5 ends-by tue 1pm 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 2
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t3
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 4pm 15
domain, t3 ends-by thu 11am 10
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t2
constraint, t4 after t5
domain, t2 ends-by wed 10am 17
domain, t3 ends-by mon 11am 14
```

```
domain, t5 ends-by wed 1pm 20
task, t1 4
task, t2 1
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t4
domain, t3 fri
domain, t1 ends-by mon 11am 6
domain, t2 ends-by thu 11am 8
domain, t4 ends-by tue 10am 12
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 after t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 after t5
domain, t2 ends-by fri 10am 15
domain, t3 ends-by tue 2pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 1
task, t4 4
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t4
domain, t3 tue
domain, t5 wed
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by mon 10am 6
domain, t4 ends-by wed 2pm 12
domain, t5 ends-by tue 2pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by thu 11am 14
domain, t3 ends-by tue 10am 6
domain, t4 ends-by fri 2pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 same-day t4
constraint, t1 after t5
```

```
domain, t4 mon
domain, t5 mon
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by thu 9am 19
domain, t4 ends-by fri 2pm 11
domain, t5 ends-by thu 9am 8
task, t1 1
task, t2 1
task, t3 1
task, t4 4
task, t5 3
constraint, t2 before t3
constraint, t2 same-day t4
domain, t2 ends-by wed 9am 7
domain, t3 ends-by wed 2pm 18
domain, t4 ends-by wed 1pm 5
domain, t5 ends-by fri 2pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t2 before t5
constraint, t3 before t4
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by fri 11am 19
domain, t4 ends-by wed 10am 20
domain, t5 ends-by thu 12pm 8
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 before t5
domain, t4 thu
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 12pm 7
domain, t3 ends-by fri 4pm 11
domain, t4 ends-by mon 4pm 16
domain, t5 ends-by fri 4pm 19
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t4 before t5
domain, t4 fri
domain, t1 ends-by tue 1pm 17
domain, t3 ends-by mon 11am 6
domain, t4 ends-by thu 1pm 5
domain, t5 ends-by wed 3pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 4
```

```
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t1 before t5
constraint, t2 starts-at t4
domain, t2 ends-by thu 9am 7
domain, t3 ends-by mon 3pm 6
domain, t5 ends-by thu 2pm 15
task, t1 2
task, t2 4
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t5
constraint, t3 after t4
domain, t1 thu
domain, t1 ends-by mon 1pm 19
domain, t2 ends-by fri 10am 17
domain, t3 ends-by tue 11am 20
domain, t4 ends-by mon 1pm 17
domain, t5 ends-by thu 9am 14
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 1
constraint, t1 same-day t2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t5
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 11am 13
domain, t4 ends-by tue 3pm 7
domain, t5 ends-by tue 9am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t1 before t2
constraint, t1 before t5
constraint, t2 same-day t5
constraint, t3 same-day t5
constraint, t4 starts-at t5
domain, t1 mon
domain, t3 wed
domain, t1 ends-by mon 2pm 13
domain, t2 ends-by fri 12pm 15
domain, t3 ends-by wed 2pm 15
domain, t4 ends-by tue 1pm 9
domain, t5 ends-by mon 12pm 6
task, t1 3
task, t2 3
task, t3 4
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 after t5
```

constraint, t4 same-day t5
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by thu 1pm 9
domain, t4 ends-by tue 2pm 7
domain, t5 ends-by tue 11am 8
task, t1 4
task, t2 3
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t4
constraint, t1 after t5
constraint, t2 after t5
domain, t1 ends-by mon 12pm 5
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by tue 4pm 17
domain, t4 ends-by thu 12pm 9
domain, t5 ends-by wed 10am 8
task, t1 2
task, t2 1
task, t3 4
task, t4 1
task, t5 3
constraint, t1 after t4
constraint, t4 before t5
domain, t2 wed
domain, t3 fri
domain, t1 ends-by tue 11am 20
domain, t2 ends-by tue 9am 5
domain, t3 ends-by thu 9am 9
domain, t5 ends-by mon 11am 8
task, t1 4
task, t2 4
task, t3 3
task, t4 2
task, t5 3
constraint, t1 after t3
constraint, t2 before t3
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by wed 11am 17
domain, t2 ends-by wed 2pm 6
domain, t3 ends-by fri 12pm 9
domain, t4 ends-by thu 11am 17
domain, t5 ends-by wed 4pm 11
task, t1 4
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 same-day t5
constraint, t3 starts-at t4
domain, t2 wed
domain, t4 wed
domain, t1 ends-by wed 10am 15
domain, t2 ends-by tue 9am 6
domain, t4 ends-by fri 9am 9
domain, t5 ends-by thu 10am 18

No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 4
task, t4 2
task, t5 3
constraint, t1 same-day t5
constraint, t2 after t3
constraint, t2 starts-at t4
domain, t2 tue
domain, t1 ends-by fri 1pm 5
domain, t2 ends-by thu 10am 12
domain, t3 ends-by thu 1pm 8
domain, t4 ends-by fri 4pm 18
task, t1 1
task, t2 1
task, t3 2
task, t4 1
task, t5 3
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 same-day t4
constraint, t3 after t4
constraint, t3 same-day t5
constraint, t4 after t5
domain, t1 ends-by tue 9am 9
domain, t3 ends-by fri 3pm 7
domain, t4 ends-by mon 12pm 19
domain, t5 ends-by mon 11am 7
task, t1 2
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t1 ends-by mon 1pm 14
domain, t2 ends-by fri 3pm 7
domain, t3 ends-by wed 12pm 7
domain, t4 ends-by wed 12pm 15
domain, t5 ends-by tue 3pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t2 same-day t5
constraint, t3 before t5
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by thu 9am 11
domain, t4 ends-by thu 2pm 16
task, t1 1
task, t2 2

```
task, t3 2
task, t4 1
task, t5 4
constraint, t1 after t3
constraint, t2 before t4
constraint, t2 before t5
constraint, t4 same-day t5
domain, t1 ends-by wed 9am 6
domain, t2 ends-by mon 10am 11
domain, t3 ends-by fri 11am 16
domain, t4 ends-by mon 1pm 13
domain, t5 ends-by thu 2pm 19
task, t1 1
task, t2 4
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t3
domain, t1 ends-by tue 2pm 5
domain, t2 ends-by fri 9am 20
domain, t3 ends-by fri 10am 20
domain, t4 ends-by mon 9am 10
domain, t5 ends-by mon 3pm 19
n=5, k=3: avg nodes = 11.6
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t2 starts-at t4
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by mon 4pm 20
domain, t4 ends-by fri 9am 16
domain, t5 ends-by fri 4pm 17
task, t1 4
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 before t4
domain, t1 ends-by wed 10am 20
domain, t3 ends-by mon 3pm 8
domain, t4 ends-by thu 1pm 18
domain, t5 ends-by wed 11am 15
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t3 same-day t4
domain, t1 ends-by tue 9am 9
domain, t2 ends-by mon 11am 15
domain, t3 ends-by mon 10am 9
domain, t4 ends-by tue 3pm 11
task, t1 2
```

```
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t5
constraint, t2 after t5
constraint, t3 starts-at t5
domain, t1 ends-by mon 11am 11
domain, t3 ends-by fri 11am 17
domain, t4 ends-by fri 9am 16
domain, t5 ends-by tue 1pm 7
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 1
constraint, t1 after t4
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t4 after t5
domain, t1 ends-by thu 12pm 8
domain, t2 ends-by thu 9am 13
domain, t3 ends-by tue 9am 17
domain, t5 ends-by thu 11am 9
task, t1 3
task, t2 2
task, t3 3
task, t4 2
task, t5 2
constraint, t4 after t5
domain, t2 tue
domain, t2 ends-by thu 9am 17
domain, t3 ends-by thu 1pm 7
domain, t4 ends-by thu 10am 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
constraint, t2 after t3
constraint, t3 after t4
domain, t1 wed
domain, t2 tue
domain, t1 ends-by wed 1pm 14
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 11
domain, t4 ends-by fri 10am 9
domain, t5 ends-by thu 2pm 17
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t2
constraint, t3 after t5
domain, t5 mon
domain, t1 ends-by thu 3pm 7
domain, t2 ends-by fri 1pm 13
domain, t3 ends-by wed 9am 11
domain, t4 ends-by wed 9am 14
```

```
domain, t5 ends-by fri 3pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
domain, t2 ends-by mon 11am 18
domain, t3 ends-by wed 1pm 12
domain, t4 ends-by thu 2pm 20
domain, t5 ends-by thu 1pm 6
task, t1 1
task, t2 2
task, t3 1
task, t4 3
task, t5 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t2 after t5
constraint, t3 after t4
domain, t2 ends-by thu 9am 12
domain, t4 ends-by mon 9am 7
domain, t5 ends-by thu 11am 16
task, t1 1
task, t2 2
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t5
constraint, t2 before t3
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by thu 2pm 10
domain, t3 ends-by fri 9am 19
domain, t4 ends-by wed 1pm 18
domain, t5 ends-by mon 9am 12
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t2 before t5
constraint, t3 after t4
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by wed 4pm 17
domain, t2 ends-by thu 11am 20
domain, t3 ends-by thu 2pm 10
domain, t4 ends-by thu 1pm 15
domain, t5 ends-by fri 9am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 before t5
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by thu 3pm 5
```

```
domain, t3 ends-by wed 1pm 9
task, t1 2
task, t2 3
task, t3 2
task, t4 4
task, t5 2
domain, t4 thu
domain, t1 ends-by tue 12pm 16
domain, t3 ends-by thu 12pm 5
domain, t4 ends-by thu 9am 11
domain, t5 ends-by thu 11am 14
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t4 after t5
domain, t2 tue
domain, t3 ends-by mon 9am 12
domain, t4 ends-by fri 10am 13
domain, t5 ends-by tue 3pm 20
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 same-day t5
domain, t1 ends-by mon 2pm 15
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by mon 12pm 16
domain, t4 ends-by tue 12pm 7
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 3
constraint, t1 after t3
constraint, t4 starts-at t5
domain, t1 ends-by wed 2pm 11
domain, t3 ends-by mon 1pm 18
domain, t4 ends-by thu 2pm 15
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 1
constraint, t2 before t4
domain, t2 ends-by wed 4pm 5
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by fri 2pm 12
task, t1 2
task, t2 2
task, t3 2
task, t4 3
task, t5 3
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 after t3
constraint, t2 before t5
```

constraint, t3 before t4
domain, t3 ends-by wed 9am 12
domain, t4 ends-by wed 1pm 17
domain, t5 ends-by tue 9am 12
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t2
constraint, t1 same-day t4
constraint, t2 after t4
domain, t1 ends-by wed 3pm 6
domain, t3 ends-by fri 10am 7
domain, t4 ends-by fri 12pm 18
domain, t5 ends-by fri 9am 18
task, t1 2
task, t2 3
task, t3 3
task, t4 2
task, t5 2
constraint, t1 starts-at t3
constraint, t2 after t3
constraint, t2 after t4
constraint, t3 same-day t4
constraint, t3 same-day t5
domain, t1 ends-by mon 3pm 20
domain, t2 ends-by mon 2pm 13
domain, t3 ends-by tue 12pm 13
task, t1 2
task, t2 2
task, t3 4
task, t4 4
task, t5 4
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 before t5
domain, t1 tue
domain, t4 tue
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 10am 9
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by fri 2pm 7
domain, t5 ends-by tue 2pm 17
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 1
constraint, t3 after t4
domain, t1 ends-by wed 9am 17
domain, t2 ends-by wed 3pm 8
domain, t3 ends-by mon 10am 17
domain, t4 ends-by wed 2pm 6
domain, t5 ends-by fri 10am 9
task, t1 3
task, t2 1
task, t3 4
task, t4 3
task, t5 4

```
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t2 same-day t5
domain, t4 fri
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 2pm 19
domain, t3 ends-by thu 9am 13
task, t1 2
task, t2 3
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t2
constraint, t1 before t4
domain, t3 fri
domain, t2 ends-by mon 3pm 11
domain, t4 ends-by mon 10am 6
domain, t5 ends-by wed 11am 10
task, t1 2
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t1 before t2
domain, t3 thu
domain, t4 thu
domain, t2 ends-by tue 11am 12
domain, t3 ends-by mon 4pm 20
domain, t4 ends-by thu 3pm 8
domain, t5 ends-by wed 4pm 17
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 3pm 6
domain, t3 ends-by mon 10am 10
domain, t5 ends-by tue 11am 13
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 12
domain, t2 ends-by thu 11am 18
domain, t3 ends-by thu 10am 11
domain, t4 ends-by thu 1pm 7
task, t1 2
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
```

```
constraint, t4 before t5
domain, t2 mon
domain, t5 tue
domain, t1 ends-by tue 3pm 6
domain, t2 ends-by tue 3pm 10
domain, t3 ends-by thu 9am 17
domain, t5 ends-by tue 1pm 19
task, t1 3
task, t2 2
task, t3 1
task, t4 2
task, t5 1
constraint, t2 same-day t4
constraint, t3 before t5
domain, t1 ends-by thu 2pm 9
domain, t2 ends-by tue 9am 19
domain, t3 ends-by wed 2pm 16
domain, t4 ends-by tue 1pm 13
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t1 before t5
constraint, t3 before t4
constraint, t4 after t5
domain, t2 wed
domain, t2 ends-by fri 2pm 12
domain, t3 ends-by tue 9am 12
domain, t5 ends-by tue 10am 13
task, t1 4
task, t2 4
task, t3 3
task, t4 4
task, t5 3
constraint, t1 starts-at t5
constraint, t2 after t3
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 after t5
domain, t5 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by fri 10am 7
domain, t3 ends-by wed 11am 11
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t3 before t5
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by thu 3pm 8
domain, t4 ends-by thu 3pm 20
domain, t5 ends-by wed 11am 18
task, t1 1
```

```
task, t2 3
task, t3 4
task, t4 2
task, t5 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 after t4
constraint, t3 same-day t5
domain, t2 wed
domain, t4 fri
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 12pm 12
domain, t4 ends-by tue 1pm 15
domain, t5 ends-by tue 1pm 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 2
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t3
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 4pm 15
domain, t3 ends-by thu 11am 10
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t2
constraint, t4 after t5
domain, t2 ends-by wed 10am 17
domain, t3 ends-by mon 11am 14
domain, t5 ends-by wed 1pm 20
task, t1 4
task, t2 1
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t4
domain, t3 fri
domain, t1 ends-by mon 11am 6
domain, t2 ends-by thu 11am 8
domain, t4 ends-by tue 10am 12
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 after t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 after t5
domain, t2 ends-by fri 10am 15
```

domain, t3 ends-by tue 2pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 1
task, t4 4
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t4
domain, t3 tue
domain, t5 wed
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by mon 10am 6
domain, t4 ends-by wed 2pm 12
domain, t5 ends-by tue 2pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 after t4
constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by thu 11am 14
domain, t3 ends-by tue 10am 6
domain, t4 ends-by fri 2pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 same-day t4
constraint, t1 after t5
domain, t4 mon
domain, t5 mon
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by thu 9am 19
domain, t4 ends-by fri 2pm 11
domain, t5 ends-by thu 9am 8
task, t1 1
task, t2 1
task, t3 1
task, t4 4
task, t5 3
constraint, t2 before t3
constraint, t2 same-day t4
domain, t2 ends-by wed 9am 7
domain, t3 ends-by wed 2pm 18
domain, t4 ends-by wed 1pm 5
domain, t5 ends-by fri 2pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t2 before t5

```
constraint, t3 before t4
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by fri 11am 19
domain, t4 ends-by wed 10am 20
domain, t5 ends-by thu 12pm 8
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 before t5
domain, t4 thu
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 12pm 7
domain, t3 ends-by fri 4pm 11
domain, t4 ends-by mon 4pm 16
domain, t5 ends-by fri 4pm 19
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t4 before t5
domain, t4 fri
domain, t1 ends-by tue 1pm 17
domain, t3 ends-by mon 11am 6
domain, t4 ends-by thu 1pm 5
domain, t5 ends-by wed 3pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t1 before t5
constraint, t2 starts-at t4
domain, t2 ends-by thu 9am 7
domain, t3 ends-by mon 3pm 6
domain, t5 ends-by thu 2pm 15
task, t1 2
task, t2 4
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t5
constraint, t3 after t4
domain, t1 thu
domain, t1 ends-by mon 1pm 19
domain, t2 ends-by fri 10am 17
domain, t3 ends-by tue 11am 20
domain, t4 ends-by mon 1pm 17
domain, t5 ends-by thu 9am 14
task, t1 4
task, t2 3
task, t3 4
task, t4 4
```

```
task, t5 1
constraint, t1 same-day t2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t5
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 11am 13
domain, t4 ends-by tue 3pm 7
domain, t5 ends-by tue 9am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t1 before t2
constraint, t1 before t5
constraint, t2 same-day t5
constraint, t3 same-day t5
constraint, t4 starts-at t5
domain, t1 mon
domain, t3 wed
domain, t1 ends-by mon 2pm 13
domain, t2 ends-by fri 12pm 15
domain, t3 ends-by wed 2pm 15
domain, t4 ends-by tue 1pm 9
domain, t5 ends-by mon 12pm 6
task, t1 3
task, t2 3
task, t3 4
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 after t5
constraint, t4 same-day t5
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by thu 1pm 9
domain, t4 ends-by tue 2pm 7
domain, t5 ends-by tue 11am 8
task, t1 4
task, t2 3
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t4
constraint, t1 after t5
constraint, t2 after t5
domain, t1 ends-by mon 12pm 5
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by tue 4pm 17
domain, t4 ends-by thu 12pm 9
domain, t5 ends-by wed 10am 8
task, t1 2
task, t2 1
task, t3 4
task, t4 1
task, t5 3
constraint, t1 after t4
```

```
constraint, t4 before t5
domain, t2 wed
domain, t3 fri
domain, t1 ends-by tue 11am 20
domain, t2 ends-by tue 9am 5
domain, t3 ends-by thu 9am 9
domain, t5 ends-by mon 11am 8
task, t1 4
task, t2 4
task, t3 3
task, t4 2
task, t5 3
constraint, t1 after t3
constraint, t2 before t3
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by wed 11am 17
domain, t2 ends-by wed 2pm 6
domain, t3 ends-by fri 12pm 9
domain, t4 ends-by thu 11am 17
domain, t5 ends-by wed 4pm 11
task, t1 4
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 same-day t5
constraint, t3 starts-at t4
domain, t2 wed
domain, t4 wed
domain, t1 ends-by wed 10am 15
domain, t2 ends-by tue 9am 6
domain, t4 ends-by fri 9am 9
domain, t5 ends-by thu 10am 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 4
task, t4 2
task, t5 3
constraint, t1 same-day t5
constraint, t2 after t3
constraint, t2 starts-at t4
domain, t2 tue
domain, t1 ends-by fri 1pm 5
domain, t2 ends-by thu 10am 12
domain, t3 ends-by thu 1pm 8
domain, t4 ends-by fri 4pm 18
task, t1 1
task, t2 1
task, t3 2
task, t4 1
task, t5 3
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 same-day t4
constraint, t3 after t4
constraint, t3 same-day t5
```

```
constraint, t4 after t5
domain, t1 ends-by tue 9am 9
domain, t3 ends-by fri 3pm 7
domain, t4 ends-by mon 12pm 19
domain, t5 ends-by mon 11am 7
task, t1 2
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t1 ends-by mon 1pm 14
domain, t2 ends-by fri 3pm 7
domain, t3 ends-by wed 12pm 7
domain, t4 ends-by wed 12pm 15
domain, t5 ends-by tue 3pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t2 same-day t5
constraint, t3 before t5
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by thu 9am 11
domain, t4 ends-by thu 2pm 16
task, t1 1
task, t2 2
task, t3 2
task, t4 1
task, t5 4
constraint, t1 after t3
constraint, t2 before t4
constraint, t2 before t5
constraint, t4 same-day t5
domain, t1 ends-by wed 9am 6
domain, t2 ends-by mon 10am 11
domain, t3 ends-by fri 11am 16
domain, t4 ends-by mon 1pm 13
domain, t5 ends-by thu 2pm 19
task, t1 1
task, t2 4
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t3
domain, t1 ends-by tue 2pm 5
domain, t2 ends-by fri 9am 20
domain, t3 ends-by fri 10am 20
domain, t4 ends-by mon 9am 10
domain, t5 ends-by mon 3pm 19
n=5, k=4: avg nodes = 10.0
```

```
task, t1 2
task, t2 1
task, t3 1
task, t4 1
task, t5 2
constraint, t1 starts-at t3
constraint, t1 before t4
constraint, t2 starts-at t4
domain, t1 ends-by fri 4pm 20
domain, t2 ends-by mon 4pm 20
domain, t4 ends-by fri 9am 16
domain, t5 ends-by fri 4pm 17
task, t1 4
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 before t4
domain, t1 ends-by wed 10am 20
domain, t3 ends-by mon 3pm 8
domain, t4 ends-by thu 1pm 18
domain, t5 ends-by wed 11am 15
task, t1 2
task, t2 2
task, t3 1
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t3 same-day t4
domain, t1 ends-by tue 9am 9
domain, t2 ends-by mon 11am 15
domain, t3 ends-by mon 10am 9
domain, t4 ends-by tue 3pm 11
task, t1 2
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t5
constraint, t2 after t5
constraint, t3 starts-at t5
domain, t1 ends-by mon 11am 11
domain, t3 ends-by fri 11am 17
domain, t4 ends-by fri 9am 16
domain, t5 ends-by tue 1pm 7
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 1
constraint, t1 after t4
constraint, t2 same-day t3
constraint, t3 after t4
constraint, t4 after t5
domain, t1 ends-by thu 12pm 8
domain, t2 ends-by thu 9am 13
domain, t3 ends-by tue 9am 17
domain, t5 ends-by thu 11am 9
```

```
task, t1 3
task, t2 2
task, t3 3
task, t4 2
task, t5 2
constraint, t4 after t5
domain, t2 tue
domain, t2 ends-by thu 9am 17
domain, t3 ends-by thu 1pm 7
domain, t4 ends-by thu 10am 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
constraint, t2 after t3
constraint, t3 after t4
domain, t1 wed
domain, t2 tue
domain, t1 ends-by wed 1pm 14
domain, t2 ends-by wed 2pm 14
domain, t3 ends-by thu 11am 11
domain, t4 ends-by fri 10am 9
domain, t5 ends-by thu 2pm 17
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t2
constraint, t3 after t5
domain, t5 mon
domain, t1 ends-by thu 3pm 7
domain, t2 ends-by fri 1pm 13
domain, t3 ends-by wed 9am 11
domain, t4 ends-by wed 9am 14
domain, t5 ends-by fri 3pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 4
domain, t2 ends-by mon 11am 18
domain, t3 ends-by wed 1pm 12
domain, t4 ends-by thu 2pm 20
domain, t5 ends-by thu 1pm 6
task, t1 1
task, t2 2
task, t3 1
task, t4 3
task, t5 4
constraint, t1 before t2
constraint, t1 same-day t3
constraint, t1 after t5
constraint, t2 same-day t3
constraint, t2 after t5
constraint, t3 after t4
domain, t2 ends-by thu 9am 12
domain, t4 ends-by mon 9am 7
domain, t5 ends-by thu 11am 16
```

```
task, t1 1
task, t2 2
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t5
constraint, t2 before t3
constraint, t3 before t4
constraint, t4 same-day t5
domain, t1 ends-by thu 2pm 10
domain, t3 ends-by fri 9am 19
domain, t4 ends-by wed 1pm 18
domain, t5 ends-by mon 9am 12
task, t1 2
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t2 before t5
constraint, t3 after t4
constraint, t3 before t5
constraint, t4 before t5
domain, t1 ends-by wed 4pm 17
domain, t2 ends-by thu 11am 20
domain, t3 ends-by thu 2pm 10
domain, t4 ends-by thu 1pm 15
domain, t5 ends-by fri 9am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t1 after t3
constraint, t1 before t5
domain, t1 ends-by mon 2pm 19
domain, t2 ends-by thu 3pm 5
domain, t3 ends-by wed 1pm 9
task, t1 2
task, t2 3
task, t3 2
task, t4 4
task, t5 2
domain, t4 thu
domain, t1 ends-by tue 12pm 16
domain, t3 ends-by thu 12pm 5
domain, t4 ends-by thu 9am 11
domain, t5 ends-by thu 11am 14
task, t1 3
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t4 after t5
domain, t2 tue
domain, t3 ends-by mon 9am 12
domain, t4 ends-by fri 10am 13
domain, t5 ends-by tue 3pm 20
task, t1 3
task, t2 1
task, t3 4
```

```
task, t4 4
task, t5 2
constraint, t3 before t4
constraint, t3 same-day t5
domain, t1 ends-by mon 2pm 15
domain, t2 ends-by thu 2pm 10
domain, t3 ends-by mon 12pm 16
domain, t4 ends-by tue 12pm 7
task, t1 4
task, t2 1
task, t3 4
task, t4 3
task, t5 3
constraint, t1 after t3
constraint, t4 starts-at t5
domain, t1 ends-by wed 2pm 11
domain, t3 ends-by mon 1pm 18
domain, t4 ends-by thu 2pm 15
task, t1 3
task, t2 1
task, t3 4
task, t4 2
task, t5 1
constraint, t2 before t4
domain, t2 ends-by wed 4pm 5
domain, t4 ends-by wed 12pm 12
domain, t5 ends-by fri 2pm 12
task, t1 2
task, t2 2
task, t3 2
task, t4 3
task, t5 3
constraint, t1 before t3
constraint, t1 before t5
constraint, t2 after t3
constraint, t2 before t5
constraint, t3 before t4
domain, t3 ends-by wed 9am 12
domain, t4 ends-by wed 1pm 17
domain, t5 ends-by tue 9am 12
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 4
constraint, t1 same-day t2
constraint, t1 same-day t4
constraint, t2 after t4
domain, t1 ends-by wed 3pm 6
domain, t3 ends-by fri 10am 7
domain, t4 ends-by fri 12pm 18
domain, t5 ends-by fri 9am 18
task, t1 2
task, t2 3
task, t3 3
task, t4 2
task, t5 2
constraint, t1 starts-at t3
constraint, t2 after t3
constraint, t2 after t4
```

```
constraint, t3 same-day t4
constraint, t3 same-day t5
domain, t1 ends-by mon 3pm 20
domain, t2 ends-by mon 2pm 13
domain, t3 ends-by tue 12pm 13
task, t1 2
task, t2 2
task, t3 4
task, t4 4
task, t5 4
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 before t5
domain, t1 tue
domain, t4 tue
domain, t1 ends-by mon 1pm 5
domain, t2 ends-by tue 10am 9
domain, t3 ends-by thu 2pm 18
domain, t4 ends-by fri 2pm 7
domain, t5 ends-by tue 2pm 17
task, t1 4
task, t2 4
task, t3 3
task, t4 3
task, t5 1
constraint, t3 after t4
domain, t1 ends-by wed 9am 17
domain, t2 ends-by wed 3pm 8
domain, t3 ends-by mon 10am 17
domain, t4 ends-by wed 2pm 6
domain, t5 ends-by fri 10am 9
task, t1 3
task, t2 1
task, t3 4
task, t4 3
task, t5 4
constraint, t2 same-day t3
constraint, t2 before t4
constraint, t2 same-day t5
domain, t4 fri
domain, t1 ends-by mon 2pm 10
domain, t2 ends-by thu 2pm 19
domain, t3 ends-by thu 9am 13
task, t1 2
task, t2 3
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t2
constraint, t1 before t4
domain, t3 fri
domain, t2 ends-by mon 3pm 11
domain, t4 ends-by mon 10am 6
domain, t5 ends-by wed 11am 10
task, t1 2
task, t2 2
task, t3 4
task, t4 3
task, t5 3
constraint, t1 before t2
```

```
domain, t3 thu
domain, t4 thu
domain, t2 ends-by tue 11am 12
domain, t3 ends-by mon 4pm 20
domain, t4 ends-by thu 3pm 8
domain, t5 ends-by wed 4pm 17
task, t1 4
task, t2 2
task, t3 3
task, t4 3
task, t5 1
constraint, t2 after t3
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 3pm 6
domain, t3 ends-by mon 10am 10
domain, t5 ends-by tue 11am 13
task, t1 3
task, t2 1
task, t3 3
task, t4 4
task, t5 3
constraint, t1 before t5
constraint, t2 same-day t4
constraint, t2 before t5
domain, t1 ends-by fri 3pm 12
domain, t2 ends-by thu 11am 18
domain, t3 ends-by thu 10am 11
domain, t4 ends-by thu 1pm 7
task, t1 2
task, t2 1
task, t3 4
task, t4 2
task, t5 2
constraint, t1 after t3
constraint, t4 before t5
domain, t2 mon
domain, t5 tue
domain, t1 ends-by tue 3pm 6
domain, t2 ends-by tue 3pm 10
domain, t3 ends-by thu 9am 17
domain, t5 ends-by tue 1pm 19
task, t1 3
task, t2 2
task, t3 1
task, t4 2
task, t5 1
constraint, t2 same-day t4
constraint, t3 before t5
domain, t1 ends-by thu 2pm 9
domain, t2 ends-by tue 9am 19
domain, t3 ends-by wed 2pm 16
domain, t4 ends-by tue 1pm 13
task, t1 3
task, t2 1
task, t3 4
task, t4 4
task, t5 2
constraint, t1 starts-at t3
```

```
constraint, t1 before t4
constraint, t1 before t5
constraint, t3 before t4
constraint, t4 after t5
domain, t2 wed
domain, t2 ends-by fri 2pm 12
domain, t3 ends-by tue 9am 12
domain, t5 ends-by tue 10am 13
task, t1 4
task, t2 4
task, t3 3
task, t4 4
task, t5 3
constraint, t1 starts-at t5
constraint, t2 after t3
constraint, t2 starts-at t4
constraint, t3 after t4
constraint, t3 after t5
domain, t5 fri
domain, t1 ends-by wed 9am 5
domain, t2 ends-by fri 10am 7
domain, t3 ends-by wed 11am 11
No (more) solutions. Total of 1 paths expanded.
task, t1 1
task, t2 2
task, t3 4
task, t4 3
task, t5 2
constraint, t1 same-day t4
constraint, t2 same-day t3
constraint, t3 before t5
domain, t1 ends-by mon 4pm 16
domain, t2 ends-by thu 3pm 8
domain, t4 ends-by thu 3pm 20
domain, t5 ends-by wed 11am 18
task, t1 1
task, t2 3
task, t3 4
task, t4 2
task, t5 1
constraint, t1 same-day t3
constraint, t1 after t4
constraint, t2 after t4
constraint, t3 same-day t5
domain, t2 wed
domain, t4 fri
domain, t1 ends-by thu 3pm 19
domain, t2 ends-by fri 3pm 20
domain, t3 ends-by fri 12pm 12
domain, t4 ends-by tue 1pm 15
domain, t5 ends-by tue 1pm 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 2
task, t3 2
task, t4 2
task, t5 1
constraint, t1 after t3
domain, t1 ends-by fri 3pm 7
domain, t2 ends-by mon 4pm 15
```

```
domain, t3 ends-by thu 11am 10
domain, t4 ends-by thu 2pm 6
domain, t5 ends-by tue 1pm 16
task, t1 2
task, t2 1
task, t3 2
task, t4 3
task, t5 4
constraint, t1 after t2
constraint, t4 after t5
domain, t2 ends-by wed 10am 17
domain, t3 ends-by mon 11am 14
domain, t5 ends-by wed 1pm 20
task, t1 4
task, t2 1
task, t3 1
task, t4 2
task, t5 3
constraint, t2 same-day t4
domain, t3 fri
domain, t1 ends-by mon 11am 6
domain, t2 ends-by thu 11am 8
domain, t4 ends-by tue 10am 12
task, t1 1
task, t2 3
task, t3 2
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 after t4
constraint, t2 before t3
constraint, t2 after t4
constraint, t2 after t5
constraint, t3 same-day t4
constraint, t3 after t5
domain, t2 ends-by fri 10am 15
domain, t3 ends-by tue 2pm 10
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 1
task, t4 4
task, t5 3
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t4
domain, t3 tue
domain, t5 wed
domain, t2 ends-by wed 2pm 19
domain, t3 ends-by mon 10am 6
domain, t4 ends-by wed 2pm 12
domain, t5 ends-by tue 2pm 10
task, t1 4
task, t2 1
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t3
constraint, t1 same-day t4
constraint, t2 after t4
```

constraint, t3 same-day t4
domain, t1 ends-by fri 2pm 7
domain, t2 ends-by thu 11am 14
domain, t3 ends-by tue 10am 6
domain, t4 ends-by fri 2pm 18
task, t1 3
task, t2 3
task, t3 4
task, t4 2
task, t5 2
constraint, t1 same-day t4
constraint, t1 after t5
domain, t4 mon
domain, t5 mon
domain, t1 ends-by thu 2pm 14
domain, t3 ends-by thu 9am 19
domain, t4 ends-by fri 2pm 11
domain, t5 ends-by thu 9am 8
task, t1 1
task, t2 1
task, t3 1
task, t4 4
task, t5 3
constraint, t2 before t3
constraint, t2 same-day t4
domain, t2 ends-by wed 9am 7
domain, t3 ends-by wed 2pm 18
domain, t4 ends-by wed 1pm 5
domain, t5 ends-by fri 2pm 19
task, t1 1
task, t2 3
task, t3 4
task, t4 1
task, t5 1
constraint, t2 after t4
constraint, t2 before t5
constraint, t3 before t4
domain, t2 ends-by mon 2pm 5
domain, t3 ends-by fri 11am 19
domain, t4 ends-by wed 10am 20
domain, t5 ends-by thu 12pm 8
task, t1 1
task, t2 2
task, t3 3
task, t4 1
task, t5 3
constraint, t1 before t5
domain, t4 thu
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by wed 12pm 7
domain, t3 ends-by fri 4pm 11
domain, t4 ends-by mon 4pm 16
domain, t5 ends-by fri 4pm 19
task, t1 4
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 same-day t3
constraint, t1 after t5

```
constraint, t4 before t5
domain, t4 fri
domain, t1 ends-by tue 1pm 17
domain, t3 ends-by mon 11am 6
domain, t4 ends-by thu 1pm 5
domain, t5 ends-by wed 3pm 12
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 2
task, t3 3
task, t4 4
task, t5 4
constraint, t1 after t3
constraint, t1 same-day t4
constraint, t1 before t5
constraint, t2 starts-at t4
domain, t2 ends-by thu 9am 7
domain, t3 ends-by mon 3pm 6
domain, t5 ends-by thu 2pm 15
task, t1 2
task, t2 4
task, t3 1
task, t4 3
task, t5 1
constraint, t1 before t5
constraint, t3 after t4
domain, t1 thu
domain, t1 ends-by mon 1pm 19
domain, t2 ends-by fri 10am 17
domain, t3 ends-by tue 11am 20
domain, t4 ends-by mon 1pm 17
domain, t5 ends-by thu 9am 14
task, t1 4
task, t2 3
task, t3 4
task, t4 4
task, t5 1
constraint, t1 same-day t2
constraint, t1 before t4
constraint, t2 same-day t3
constraint, t2 before t5
constraint, t3 after t5
domain, t1 ends-by tue 2pm 6
domain, t2 ends-by wed 11am 13
domain, t4 ends-by tue 3pm 7
domain, t5 ends-by tue 9am 16
No (more) solutions. Total of 1 paths expanded.
task, t1 3
task, t2 3
task, t3 1
task, t4 2
task, t5 3
constraint, t1 before t2
constraint, t1 before t5
constraint, t2 same-day t5
constraint, t3 same-day t5
constraint, t4 starts-at t5
domain, t1 mon
domain, t3 wed
domain, t1 ends-by mon 2pm 13
```

```
domain, t2 ends-by fri 12pm 15
domain, t3 ends-by wed 2pm 15
domain, t4 ends-by tue 1pm 9
domain, t5 ends-by mon 12pm 6
task, t1 3
task, t2 3
task, t3 4
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t2 after t5
constraint, t4 same-day t5
domain, t1 ends-by tue 3pm 18
domain, t2 ends-by thu 1pm 9
domain, t4 ends-by tue 2pm 7
domain, t5 ends-by tue 11am 8
task, t1 4
task, t2 3
task, t3 4
task, t4 2
task, t5 4
constraint, t1 after t4
constraint, t1 after t5
constraint, t2 after t5
domain, t1 ends-by mon 12pm 5
domain, t2 ends-by tue 4pm 10
domain, t3 ends-by tue 4pm 17
domain, t4 ends-by thu 12pm 9
domain, t5 ends-by wed 10am 8
task, t1 2
task, t2 1
task, t3 4
task, t4 1
task, t5 3
constraint, t1 after t4
constraint, t4 before t5
domain, t2 wed
domain, t3 fri
domain, t1 ends-by tue 11am 20
domain, t2 ends-by tue 9am 5
domain, t3 ends-by thu 9am 9
domain, t5 ends-by mon 11am 8
task, t1 4
task, t2 4
task, t3 3
task, t4 2
task, t5 3
constraint, t1 after t3
constraint, t2 before t3
constraint, t3 before t4
domain, t5 tue
domain, t1 ends-by wed 11am 17
domain, t2 ends-by wed 2pm 6
domain, t3 ends-by fri 12pm 9
domain, t4 ends-by thu 11am 17
domain, t5 ends-by wed 4pm 11
task, t1 4
task, t2 3
task, t3 2
```

```
task, t4 4
task, t5 3
constraint, t1 after t2
constraint, t1 before t3
constraint, t1 same-day t5
constraint, t3 starts-at t4
domain, t2 wed
domain, t4 wed
domain, t1 ends-by wed 10am 15
domain, t2 ends-by tue 9am 6
domain, t4 ends-by fri 9am 9
domain, t5 ends-by thu 10am 18
No (more) solutions. Total of 1 paths expanded.
task, t1 4
task, t2 4
task, t3 4
task, t4 2
task, t5 3
constraint, t1 same-day t5
constraint, t2 after t3
constraint, t2 starts-at t4
domain, t2 tue
domain, t1 ends-by fri 1pm 5
domain, t2 ends-by thu 10am 12
domain, t3 ends-by thu 1pm 8
domain, t4 ends-by fri 4pm 18
task, t1 1
task, t2 1
task, t3 2
task, t4 1
task, t5 3
constraint, t1 before t3
constraint, t1 before t4
constraint, t2 same-day t4
constraint, t3 after t4
constraint, t3 same-day t5
constraint, t4 after t5
domain, t1 ends-by tue 9am 9
domain, t3 ends-by fri 3pm 7
domain, t4 ends-by mon 12pm 19
domain, t5 ends-by mon 11am 7
task, t1 2
task, t2 4
task, t3 2
task, t4 4
task, t5 2
constraint, t1 after t3
constraint, t1 after t5
constraint, t3 same-day t4
constraint, t3 after t5
constraint, t4 after t5
domain, t1 ends-by mon 1pm 14
domain, t2 ends-by fri 3pm 7
domain, t3 ends-by wed 12pm 7
domain, t4 ends-by wed 12pm 15
domain, t5 ends-by tue 3pm 18
task, t1 2
task, t2 3
task, t3 4
task, t4 2
```

```
task, t5 2
constraint, t1 after t3
constraint, t2 same-day t3
constraint, t2 same-day t5
constraint, t3 before t5
domain, t3 tue
domain, t1 ends-by wed 4pm 19
domain, t2 ends-by wed 9am 17
domain, t3 ends-by thu 9am 11
domain, t4 ends-by thu 2pm 16
task, t1 1
task, t2 2
task, t3 2
task, t4 1
task, t5 4
constraint, t1 after t3
constraint, t2 before t4
constraint, t2 before t5
constraint, t4 same-day t5
domain, t1 ends-by wed 9am 6
domain, t2 ends-by mon 10am 11
domain, t3 ends-by fri 11am 16
domain, t4 ends-by mon 1pm 13
domain, t5 ends-by thu 2pm 19
task, t1 1
task, t2 4
task, t3 4
task, t4 4
task, t5 3
constraint, t1 same-day t3
domain, t1 ends-by tue 2pm 5
domain, t2 ends-by fri 9am 20
domain, t3 ends-by fri 10am 20
domain, t4 ends-by mon 9am 10
domain, t5 ends-by mon 3pm 19
n=5, k=5: avg nodes = 8.7
```


The performance of the solver using a range of values of k
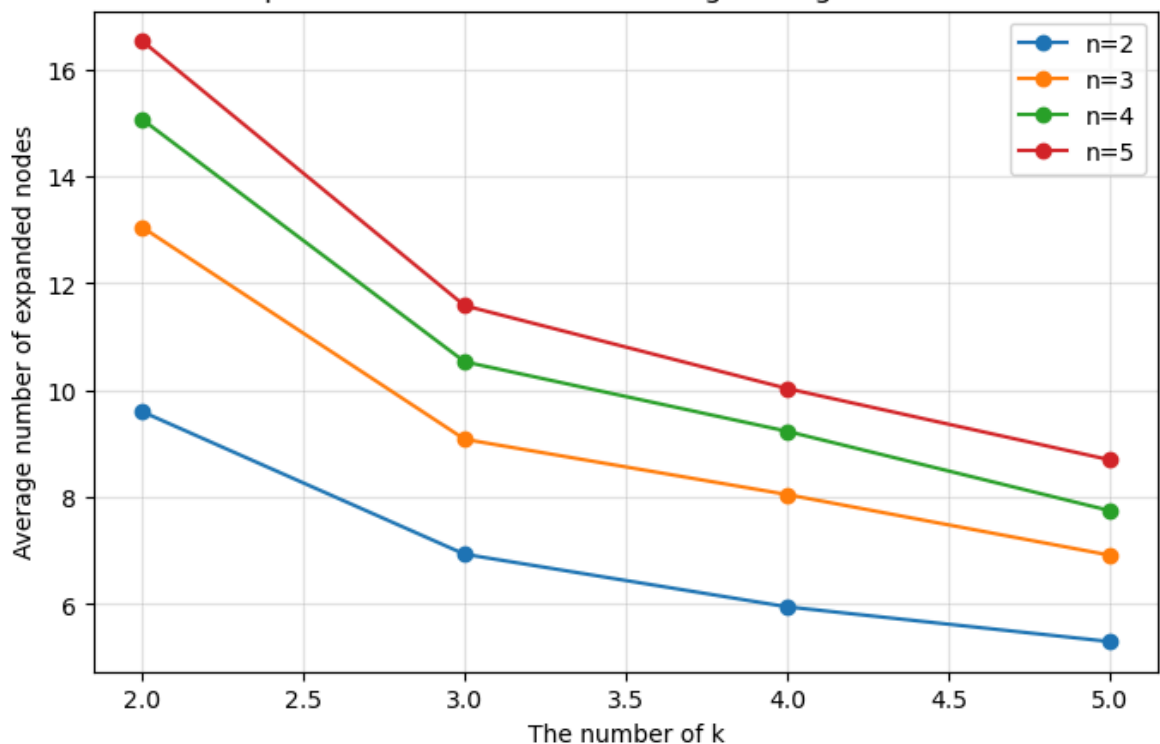
Answers for Question 6 2. As we can observe from the graph, the average number of nodes decreases as k increases for different values of n=2, 3, 4, 5. However, the rate of change along the y-axis/x-axis is diminishing, indicating to some extent that the effect of increasing k on reducing the number of nodes is becoming less effective.