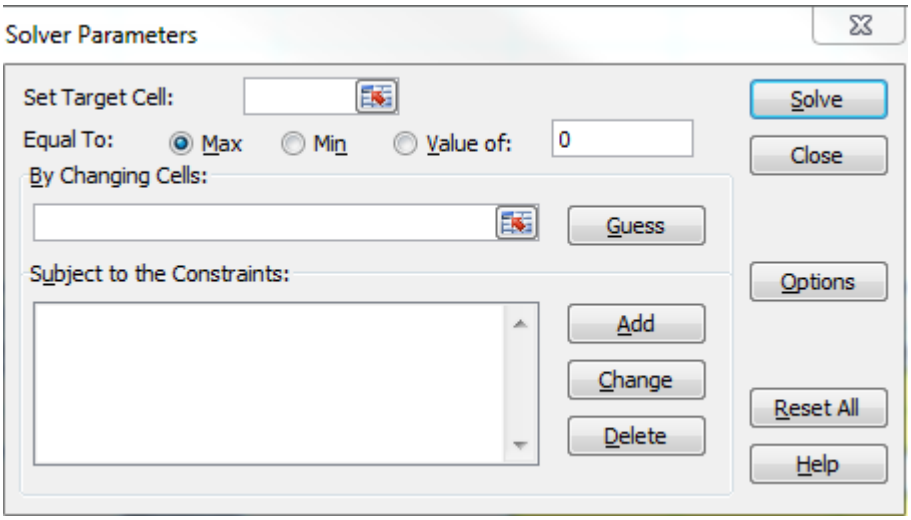
Case 2
Solving using Excel

Task 1: Excel Solver Interface
The Excel Solver Interface will be discussed in class. Students must properly label where the parts of the LP should be placed

Label the where each part of the objective is placed:



Task 2: Solving an LP guided
Follow the step-by-step procedure discussed in class

Solve the LP

$$\begin{aligned} \text{Max } z = 4x_1 + 3x_2 + 2x_3 + 3x_4 \\ 2x_1 + x_2 + x_3 + x_4 \leq 21 \\ 2x_1 + 2x_2 - 2x_3 \leq 18 \\ x_1 - 4x_2 + 2x_4 \leq 15 \end{aligned}$$

$$x_1, x_2, x_3, x_4 \geq 0$$

What Excel Function or Formula was used to model the left hand side of the constraints?

_____

Task 3: Review on LP Formulation

Formulate the LP Given:

HiDec produces three models of electronic gadgets that use resistors, capacitors, and chips. The given table summarizes the data of the situation. Find the optimal product mix that will maximize the company's profit.

Resource	Unit Resource Requirement			Available Units
	Model 1	Model 2	Model 3	
Resistor	2	2	3	1200
Capacitor	2	1	1	100
Chips	0	1	4	800
Profit	3	3	4	

Task 4: Solving the LP

Using your LP in Task 3. Solve the LP using Excel Solver

What is the optimal production mix for the company?

_____

Task 5: Individual Solving

Solve the LP using Excel solver. Your instructor must check your Excel Sheets before your answers are accepted.

Problem 1

Gru can hire two minions. Minion 1 can produce 4 purple jellies and 5 orange jellies. Minion 2 can produce 5 5 purple jellies and 4 orange jellies. Minion 1 and Minion 2 costs 3 bananas and 6 bananas respectively. The kids' demand is to have 35 purple jellies and 25 orange jellies. If Gru only has 65 bananas how many of each minion should Gru hire? Gru wishes to minimize the number of minions he hires.

How many of each minion should Gru hire?

_____

Will Gru have extra bananas? If Yes, How many?

_____

Problem 2

Mode of Production	Mo Capacity (in cases)	Production Cost per Case ($)
Regular	5,000	10
Overtime	500	16
Subcontracting	n/a	20
Holding Cost Per Month		$1

Nowjuice, Inc. produces bottled juice. A planner has developed an aggregate forecast for demand (in cases) for the next six months. Develop a least-cost aggregate plan using the following information. Assume zero (0) beginning inventory.

Month	May	June	July	Aug	Sep	Oct
Forecast	4,000	4,800	5,600	7,200	6,400	5,000

What is the Optimal Production Plan?