Quiz 3: Integer Optimization Results for Liangrui Lu

Correct answers are hidden.

Score for this attempt: **10** out of 10
Submitted Oct 11, 2021 at 4:11pm
This attempt took 10 minutes.

问题 1

1 / 1 pts

In an ILP model, y1 indicates whether we produce product 1 and x1 indicates the number of units to produce. Which of the following constraints are necessary to enforce the following condition:

Product 1 can only be produced if the production quantity is greater than 200.

Mark all the equations that are necessary.

- [ ] x1*y1 >= 200
- [x] x1 >= 200 y1
- [ ] If y1 = 1, then x1>=200
- [x] x1 <= M y1
- [ ] x1 >= 200 + M y1
- [ ] x1 >= 200

问题 2

1 / 1 pts

The branch and bound solution method cannot be applied to 0-1 integer programming problems.

- True
- False

问题 3

1 / 1 pts

The college dean is deciding among three equally qualified (in their eyes, at least) candidates for his associate dean position. If this situation could be modeled as an integer LP, the decision variables would be cast as 0-1 integer variables.

- True
- False

问题 4

1 / 1 pts

In formulating a mixed integer programming problem, the constraint $x1 + x2 \leq 500y1$ where $y1$ is a 0-1 variable, and $x1$ and $x2$ are continuous variables, then $x1 + x2 \leq 500$ if $y1$ is:

- 1

- 0
- 0 or 1
- none of these options

问题 5

1 / 1 pts

In a 0-1 integer programming model, where x1 indicates the selection of project 1 and x2 the selection of project 2, which of the following equations enforce the condition that project 1 must be selected in order to be able to select project 2?

- x1 + x2 = 2
- x2 <= x1
- x1 + x2 >=1
- x1 <= x2

问题 6

1 / 1 pts

In a mixed integer model, some solution values for decision variables are integer and others can be non-integer.

- True

False

问题 7

1 / 1 pts

The LP relaxation of a minimization integer linear programming (ILP) problem would represent a(n) _____ on the optimal objective function value of the original ILP problem.

- estimate
- target
- upper bound
- lower bound

问题 8

1 / 1 pts

In a 0-1 integer programming model, if the constraint $x1 - x2 = 0$, it means when project 1 is selected, project 2 _____ be selected.

- can never
- can also
- must also
- can sometimes

问题 9

1 / 1 pts

The optimal solution to an ILP will always be at a corner point of the feasible region.

- True
- False

问题 10

1 / 1 pts

The _____ method is based on the principle that the total set of feasible solutions can be partitioned into smaller subsets of solutions.

- Simplex method
- integer method
- branch and bound method
- trial and error method

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