8. Consider the following minimization problem.

Min *z* = *x*1 + 2*x*2

s.t. *x*1 + *x*2  300

2*x*1 + *x*2  400

2*x*1 + 5*x*2  750

*x*1, *x*2  0

## Which constraints are satisfied at the optimal solution (*x*1 = 250, *x*2 = 50)?

9. Consider the following minimization problem.

Min *z* = 1.5*x*1 + 2*x*2

s.t. *x*1 + *x*2  300

2*x*1 + *x*2  400

2*x*1 + 5*x*2  750

*x*1, *x*2  0

What are the optimal values of *x*1, *x*2, and *z* ?

### 10. Consider the following linear programming problem:

Max Z = $15*x* + $20*y*

Subject to : 8*x* + 5*y*  40

0.4*x*  + *y*  4

*x*, *y* 

Determine the values for *x* and *y* that will maximize revenue. Given this optimal revenue, what is the amount of slack associated with the first constraint?