GRAPHICAL METHOD

1. Max $Z = 6x + 7y$

   Subject to:

$$2x + 3y \leq 12$$
$$2x + y \leq 8$$
$$x,y \geq 0$$

2. Min $Z = 3x + 4y$

   Subject to:

$$x + y \leq 100$$
$$3x + 2y \geq 240$$
$$x,y \geq 0$$

3. Max $Z = 50x + 30y$

   Subject to:

$$2x + y \geq 18$$
$$x + y \geq 12$$
$$3x + 2y \leq 34$$
$$x,y \geq 0$$

4. Max $Z = 4x_1 + 3x_2$

   Subject to:

$$2x_1 + 3x_2 \leq 6$$
$$x_1 + 4x_2 \geq 10$$
$$x_1, x_2 \geq 0$$

5. Max $Z = 10x_1 + 20x_2$

   Subject to:

$$x_1 + 1.5x_2 \geq 3$$
$$8x_1 + 2x_2 \geq 8$$
$$x_1,x_2 \geq 0$$

6. Max $Z = 5{,}00{,}000x + 1{,}00{,}000y$

   Subject to:

$$50{,}000x + 20{,}000y \leq 2{,}00{,}000$$
$$x \geq 3$$
$$y \leq 5$$
$$x,y \geq 0$$

7. Max $Z = 100x + 150y$

   Subject to:

$$0.80x + 1.20y \leq 720$$
$$x \leq 600$$
$$y \leq 400$$
$$x,y \geq 0$$

8. Min $Z = 3x + 2y$

   Subject to:

$$7x + 2y \geq 30$$
$$5x + 4y \geq 20$$
$$2x + 8y \geq 16$$
$$x,y \geq 0$$

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9. Max $Z = 3x + 5y$

Subject to:

$$x + 2y \leq 2000$$
$$x + y \leq 1500$$
$$y \leq 600$$
$$x,y \geq 0$$

10. Max $Z = 2x + 10y$

Subject to:

$$2x + 5y \leq 16$$
$$6x \leq 30$$
$$x,y \geq 0$$

11. Max $Z = 50x + 70y$

Subject to:

$$120x + 120y \leq 8{,}400$$
$$30x + 60y \leq 3{,}000$$
$$80x + 40y \leq 4{,}800$$
$$x,y \geq 0$$

12. Max $Z = 40x + 80y$

Subject to:

$$2x + 3y \leq 48$$
$$x \leq 15$$
$$y \leq 10$$
$$x,y \geq 0$$

13. Max $Z = 40x + 30y$

Subject to:

$$1x + 2y \leq 600$$
$$3x + 2y \leq 15$$
$$3x + y \leq 10$$
$$x,y \geq 0$$

14. Min $Z = 6x + 5y$

Subject to:

$$0.6x + 0.6y \geq 4{,}800$$
$$0.6x + 1.2y \geq 3{,}600$$
$$x,y \geq 0$$

15. Max $Z = 80x + 120y$

Subject to:

$$x + y \leq 9$$
$$x \geq 2$$
$$y \geq 3$$
$$20x + 50y \leq 360$$
$$x,y \geq 0$$

**********THE END**********

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