

Unit Test #1 Review: Ch. 5 - Linear Inequalities
Answer Section: MULTIPLE CHOICE

1. ANS: B

2. ANS: A

3. ANS: B

4. ANS: C

5. ANS: C

6. ANS: B

7. ANS: B

8. ANS: A

9. ANS: A

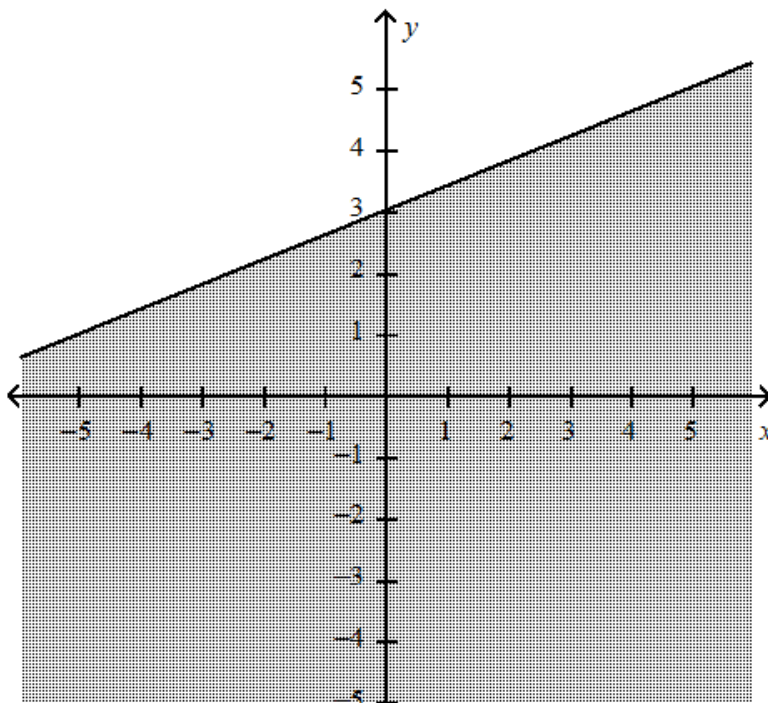
10. ANS: A

11. ANS: B

12. ANS: A

SHORT ANSWER

13. ANS:



14. ANS:

$$\{(x, y) \mid x + 4y > 4, y \geq 5x - 5, x \in \mathbb{R}, y \in \mathbb{R}\}$$

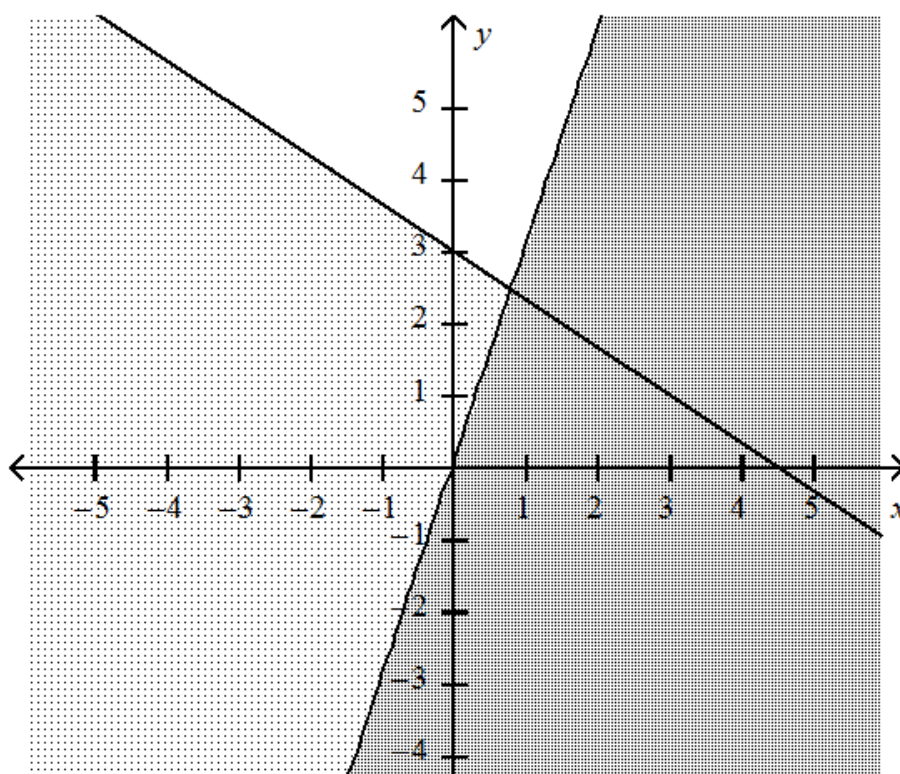
15. ANS:

$$\{(x, y) \mid x \leq 2.5, y > -3, x \in \mathbb{R}, y \in \mathbb{R}\}$$

16. ANS:

Above the line

17. ANS:



18. ANS:

Constraints:

$$h \geq 0$$

$$s \geq 0$$

$$h \leq 100$$

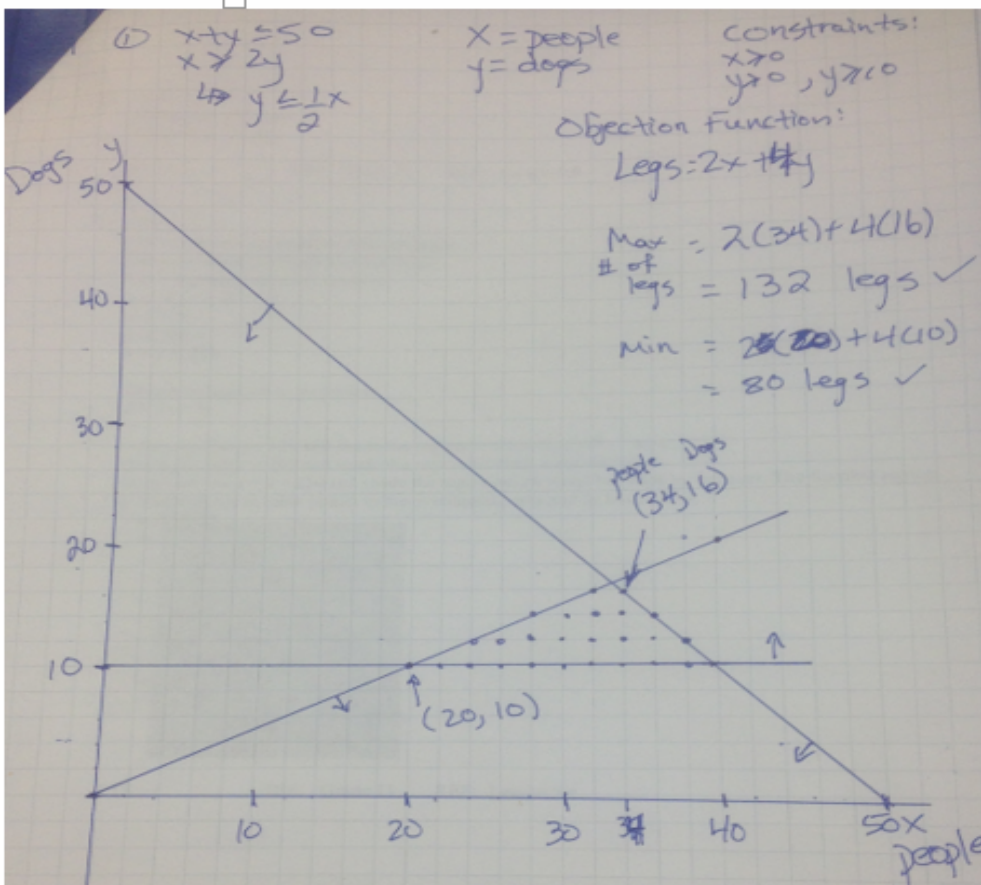
$$s \leq 300$$

$$2h \leq s$$

Objective function:

$$P = 2h + 1.5s$$

19. ANS:
 Maximum: 132 legs
 Minimum: 80 legs



20. ANS:

Let x represent the number of hamburgers.Let y represent the number of hot dogs.Let R represent the sales revenue.

$$x \in W, y \in W$$

$$x \leq 120$$

$$y \leq 200$$

$$x + y \leq 250$$

Objective function to maximize:

$$R = 5x + 3y$$

Graph the line $x = 120$ and shade the region between it and the y -axis.Graph the line $y = 200$ and shade the region between it and the x -axis.Graph the line $x + y = 250$ and shade the region below it and bounded by the axes. The feasible region is all the whole number points in the overlapping area and its boundaries.