Algebra 1R Name_____

Chapter 6 & 7 Day 5 Homework

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Write a system of linear inequalities that represents each problem situation. Remember to define your variables.

1. Jamal runs the bouncy house at a festival. The bouncy house can hold a maximum of 1200 pounds at one time. He estimates that adults weigh approximately 200 pounds and children under 16 weigh approximately 100 pounds. For 1 four-minute session of bounce time, Jamal charges adults $3 each and children $2 each. Jamal hopes to charge at least $24 for each session.

3. The maximum capacity for an average passenger elevator is 15 people and 3000 pounds. It is estimated that adults weigh approximately 200 pounds and children under 16 weigh approximately 100 pounds.

5. Eiko is drawing caricatures at a fair for 8 hours. She can complete a small drawing in 15 minutes and charges $10 for the drawing. She can complete a larger drawing in 45 minutes and charges $25 for the drawing. Eiko hopes to make at least $200 at the fair.

Determine whether each given point is a solution to the system of linear inequalities.

7. $\begin{cases} 2x - y > 4 \\ -x + y \leq 7 \end{cases}$

Point: $(-2, -10)$

9. $\begin{cases} 4x + y < 21 \\ \frac{1}{2}x \leq 36 - 5y \end{cases}$

Point: $(3, 7)$

11. $\begin{cases} 15x + 25y \geq 300 \\ 20x + 30y \leq 480 \end{cases}$

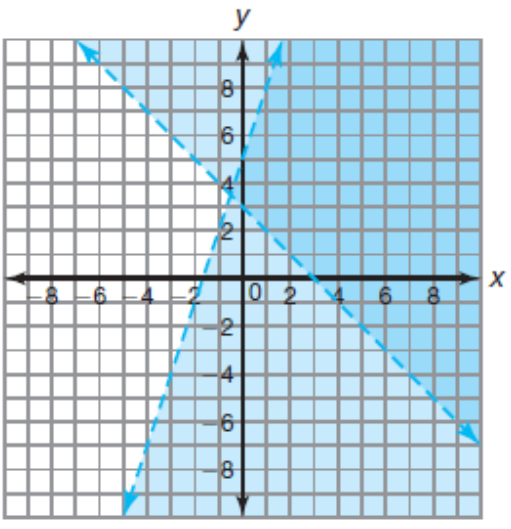
Point: $(14, 8)$

Graph each system of linear inequalities and identify two solutions.

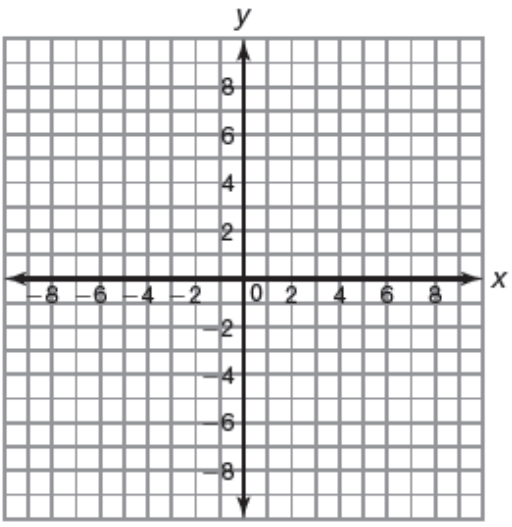
13. $\begin{cases} y - 3x < 5 \\ y + x > 3 \end{cases}$

Answers will vary.

(2, 3) and (6, 0)



15. $\begin{cases} y \leq -\frac{2}{3}x + 3 \\ y \geq 3x - 4 \end{cases}$



17. $\begin{cases} y \geq -\frac{1}{3}x + 4 \\ y \geq 2x + 5 \end{cases}$