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4. Mario is shopping for a watch. The regular price of a watch is between \$45 and \$120. The store is running a special promotion where all watches are at least 25% off the regular price. Write a system of linear inequalities that represents the amount Mario could spend.
5. A company manufactures at most 20 mattresses each day. The company produces a twin size mattress and a queen size mattress. Its daily production goal is to produce at least 5 of each type of mattress. Write a system of linear inequalities that represents the number of each type of mattress that can be produced.
6. A company manufactures at most 200 tires each day. The company produces an all-weather tire and a snow tire. Its daily production goal is to produce at least 75 of each type of tire. Write a system of linear inequalities that represents the number of each type of tire that can be produced.

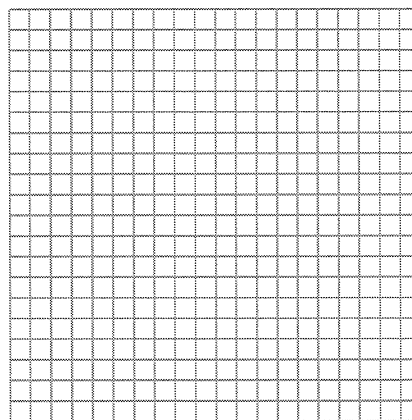
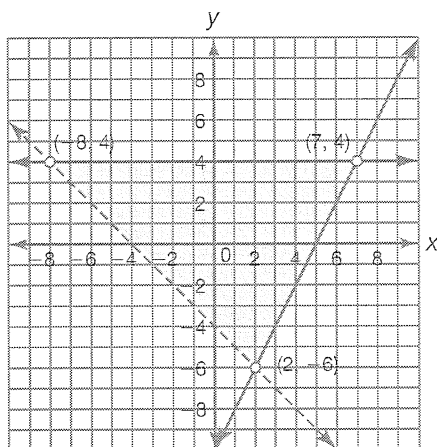


Name _____ Date _____

Graph the solution set for each system of linear inequalities. Label all points of intersection of the boundary lines. Then determine a point that satisfies all of the linear inequalities in the system.

7.
$$\begin{cases} y \leq 4 \\ 2x - y \leq 10 \\ y > -x - 4 \end{cases}$$

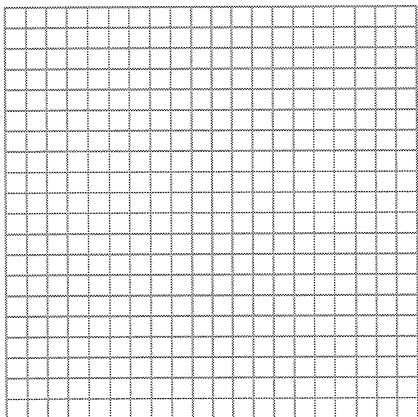
8.
$$\begin{cases} y \geq -2 \\ y \leq 4 \\ x + 1 > y \\ x - 1 < y \end{cases}$$



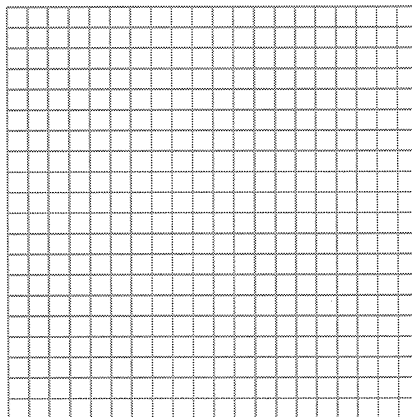
Answers will vary.

A solution to the system of inequalities would be (0, 0).

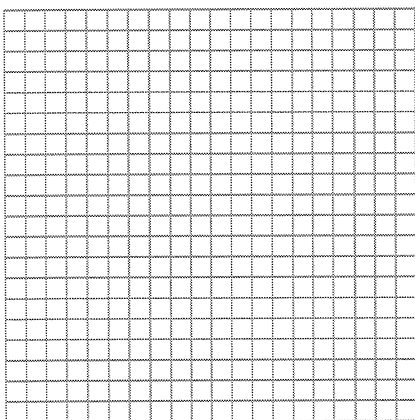
9.
$$\begin{cases} y \leq 2 + x \\ y > x - 1 \\ 2x + y \geq -3 \\ -x + 1 > y \end{cases}$$



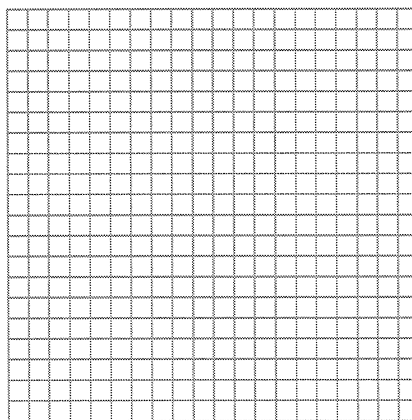
10.
$$\begin{cases} y > -2 \\ y \leq x + 1 \\ -x \leq y + 3 \\ y \leq -x + 1 \\ y \leq 0 \end{cases}$$



11.
$$\begin{cases} y > -2 \\ y \leq 5 \\ x \geq -3 \\ x \leq 1 \\ y > 3x + 1 \end{cases}$$



12.
$$\begin{cases} y \leq 3x + 2 \\ y < 4 - x \\ -2x + 3y \leq 2 \\ 3y \geq 2x - 8 \end{cases}$$



Name _____ Date _____

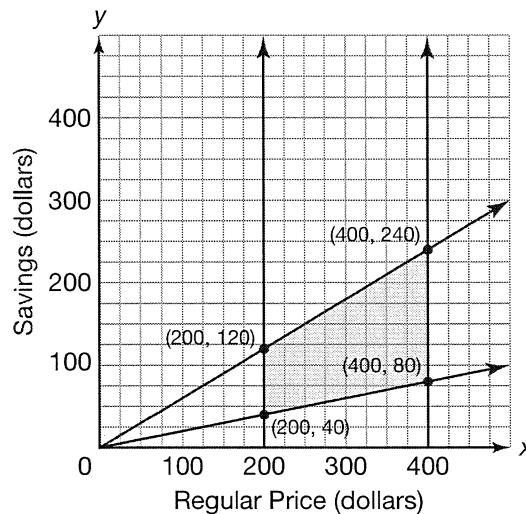
Analyze the solution set for the system of linear inequalities to answer each question.

Pedro is shopping for a surfboard. The regular price of a surfboard is between \$200 and \$400. The store is running a special promotion where all surfboards are between 20% and 60% off the regular price. The system of linear inequalities represents the amount Pedro can save.

Let r represent the regular price.

Let s represent the amount Pedro can save.

$$\begin{cases} r \geq 200 \\ r \leq 400 \\ s \leq 0.60r \\ s \geq 0.20r \end{cases}$$



13. What is the most that Pedro can save?

The most Pedro can save is \$240 represented by the point (400, 240).

14. What is the least that Pedro can save?

15. What is the most that Pedro will pay for the most expensive surfboard?

16. What is the most that Pedro will pay for the least expensive surfboard?

17. What is the least that Pedro will pay for the most expensive surfboard?

18. What is the least that Pedro will pay for the least expensive surfboard?

