

Lesson 26 Practice Problems

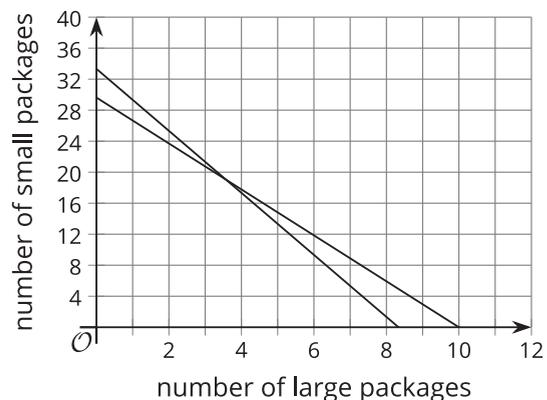
1. The organizers of a conference needs to prepare at least 200 notepads for the event and have a budget of \$160 for the notepads. A store sells notepads in packages of 24 and packages of 6.

This system of inequalities represent these constraints:
$$\begin{cases} 24x + 6y \geq 200 \\ 16x + 5.40y \leq 160 \end{cases}$$

- a. Explain what the second inequality in the system tells us about the situation.

- b. Here are incomplete graphs of the inequalities in the system, showing only the boundary lines of the solution regions.

Which graph represents the boundary line of the second inequality?



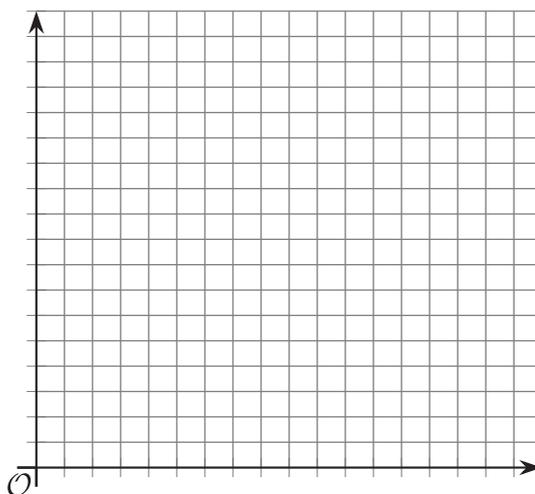
- c. Complete the graphs to show the solution set to the system of inequalities.
- d. Find a possible combination of large and small packages of notepads the organizer could order.

(From Unit 2, Lesson 25.)

2. A certain stylist charges \$15 for a haircut and \$30 for hair coloring. A haircut takes on average 30 minutes, while coloring takes 2 hours. The stylist works up to 8 hours in a day, and she needs to make a minimum of \$150 a day to pay for her expenses.

a. Create a system of inequalities that describes the constraints in this situation. Be sure to specify what each variable represents.

b. Graph the inequalities and show the solution set.



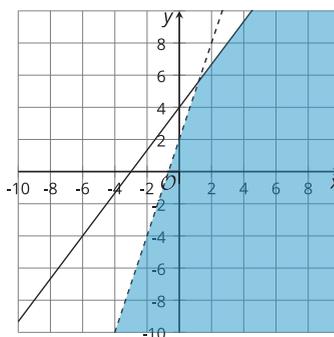
c. Identify a point that represents a combination of haircuts and hair-coloring jobs that meets the stylist's requirements.

d. Identify a point that is a solution to the system of inequalities but is not possible or not likely in the situation. Explain why this solution is impossible or unlikely.

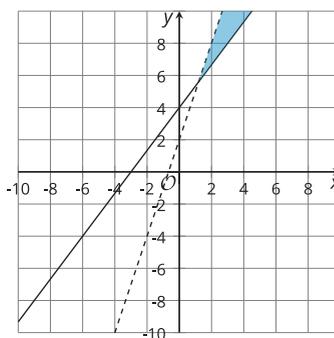
(From Unit 2, Lesson 25.)

3. Choose the graph that shows the solution to this system: $\begin{cases} y > 3x + 2 \\ -4x + 3y \leq 12 \end{cases}$

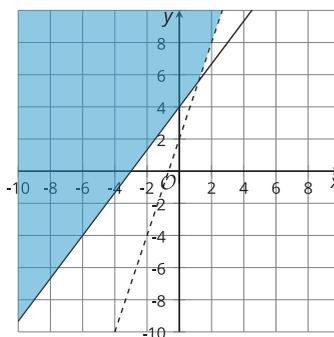
A.



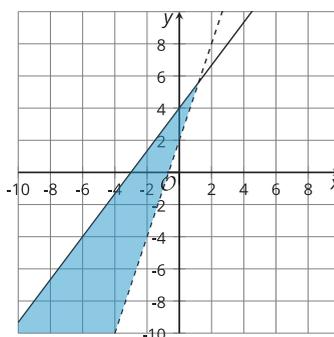
B.



C.



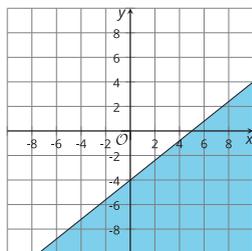
D.



(From Unit 2, Lesson 24.)

4. Match each inequality to the graph of its solution.

A.



1. $2x - 5y \geq 20$

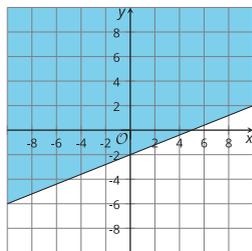
2. $5x + 2y \geq 20$

3. $4x - 10y \leq 20$

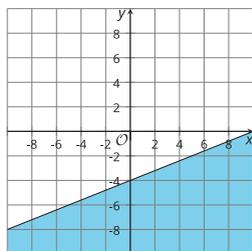
4. $4x - 5y \geq 20$

5. $2x + 10y \leq 20$

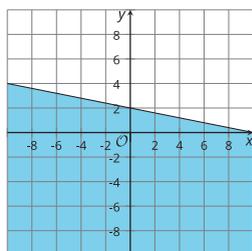
B.



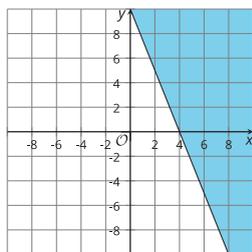
C.



D.



E.



(From Unit 2, Lesson 23.)