Name _____ Date _____ Class _____

LESSON 6-5

Practice B

Solving Linear Inequalities

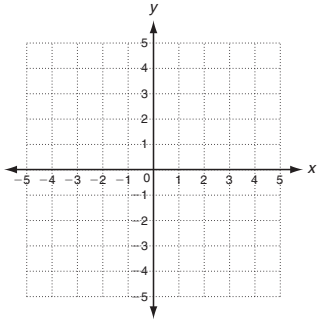
Tell whether the ordered pair is a solution of the given inequality.

1. $(1, 6)$; $y < x + 6$ **2.** $(-3, -12)$; $y \geq 2x - 5$ **3.** $(5, -3)$; $y \leq -x + 2$

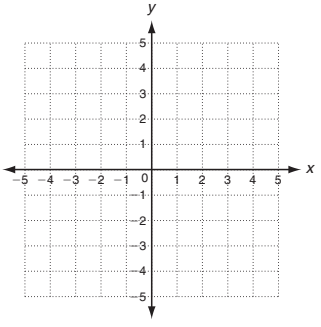
_____ _____ _____

Graph the solutions of each linear inequality.

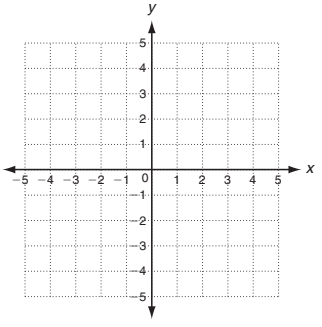
4. $y \leq x + 4$



5. $2x + y > -2$



6. $x + y - 1 < 0$



7. Clark is having a party at his house. His father has allowed him to spend at most \$20 on snack food. He'd like to buy chips that cost \$4 per bag, and pretzels that cost \$2 per bag.

a. Write an inequality to describe the situation.

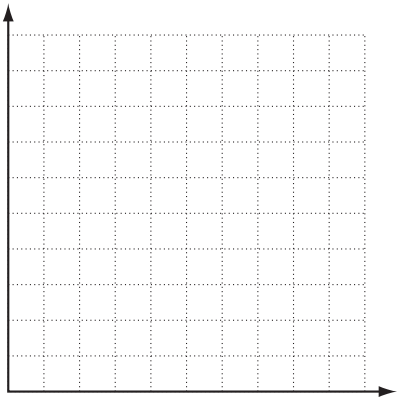
_____

b. Graph the solutions.

c. Give two possible combinations of bags of chips and pretzels that Clark can buy.

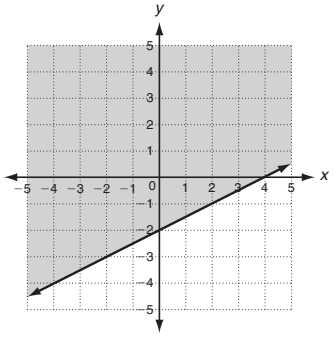
_____

_____



Write an inequality to represent each graph.

8.



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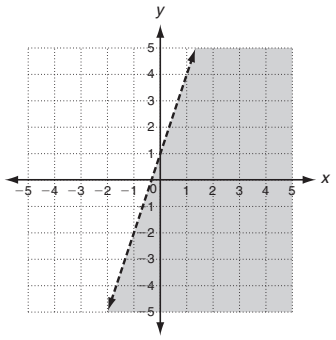

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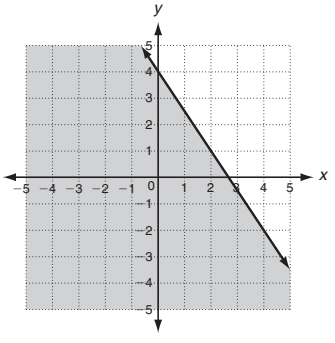


_____ _____ _____

LESSON 6-5

Practice A

Solving Linear Inequalities

Use substitution to tell whether the ordered pair is a solution of the given inequality.

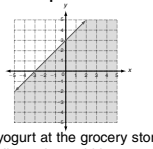
1. (3, 4); $y > x + 2$ — no

2. (4, 2); $y \leq 2x - 3$ — yes

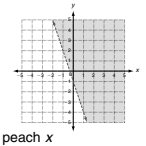
3. (2, −1); $y < -x$ — no

Rewrite each linear inequality in slope-intercept form. Then graph the solutions in the coordinate plane.

4. $y - x \leq 3$ — $y \leq x + 3$



5. $6x + 2y > -2$ — $y > -3x - 1$

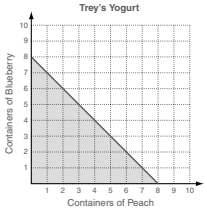


6. Trey is choosing yogurt at the grocery store. The flavors he likes are peach x and blueberry y. His mother said he may choose at most 8 containers of yogurt.

a. Write an inequality to describe the situation.

$x + y \leq 8$

b. Graph the solutions.



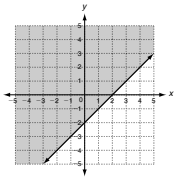
c. Give two possible combinations of peach and blueberry yogurt that Trey can choose.

Possible answer: 2 peach, 6 blueberry

or 4 peach, 3 blueberry

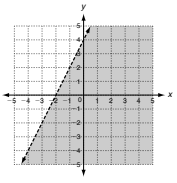
Write an inequality to represent each graph.

7.



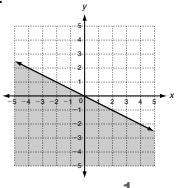
$y \geq x - 2$

8.



$y < 2x + 4$

9.



$y \leq -\frac{1}{2}x$

LESSON 6-5

Practice B

Solving Linear Inequalities

Tell whether the ordered pair is a solution of the given inequality.

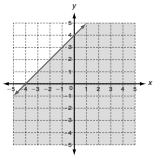
1. (1, 6); $y < x + 6$ — yes

2. (−3, −12); $y \geq 2x - 5$ — no

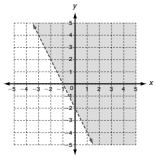
3. (5, −3); $y \leq -x + 2$ — yes

Graph the solutions of each linear inequality.

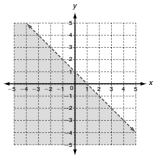
4. $y \leq x + 4$



5. $2x + y > -2$



6. $x + y - 1 < 0$

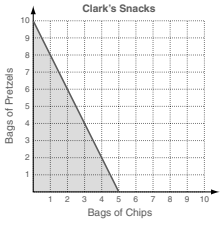


7. Clark is having a party at his house. His father has allowed him to spend at most $20 on snack food. He'd like to buy chips that cost $4 per bag, and pretzels that cost $2 per bag.

a. Write an inequality to describe the situation.

Let x = chips, y = pretzels, $4x + 2y \leq 20$

b. Graph the solutions.



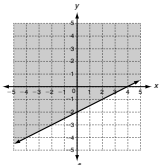
c. Give two possible combinations of bags of chips and pretzels that Clark can buy.

Possible answer: 3 chips, 4 pretzels

or 4 chips, 1 pretzel

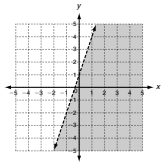
Write an inequality to represent each graph.

8.



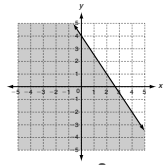
$y \geq \frac{1}{2}x - 2$

9.



$y < 3x + 1$

10.



$y \leq -\frac{3}{2}x + 4$

LESSON 6-5

Practice C

Solving Linear Inequalities

Tell whether the ordered pair is a solution of the given inequality.

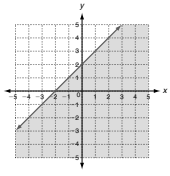
1. (−1, −4); $y \geq 2x - 1$ — no

2. (−6, 2); $y < -x - 4$ — no

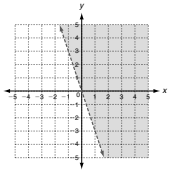
3. (4, −8); $y \leq \frac{1}{2}x + 5$ — yes

Graph the solutions of each linear inequality.

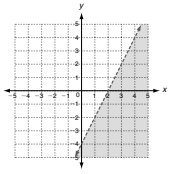
4. $y \leq x + 2$



5. $-3x < y$



6. $2x - y - 4 > 0$

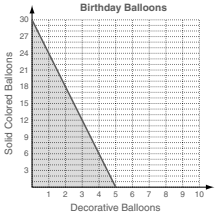


7. Adam is ordering helium balloons for his sister's birthday. He has up to $15 to spend. Decorative balloons cost $3.00 each and solid colored balloons cost $0.50 each.

a. Write an inequality to describe the situation.

x = decorative, y = solid, $3x + 0.5y \leq 15$

b. Graph the solutions.



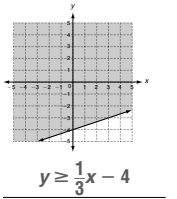
c. Give two possible combinations of decorative and solid colored balloons Adam can order.

Possible answer: 3 decorative, 12 solid

or 2 decorative, 15 solid

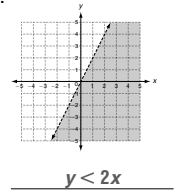
Write an inequality to represent each graph.

8.



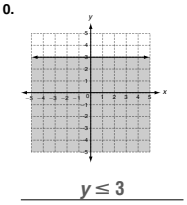
$y \geq \frac{1}{3}x - 4$

9.



$y < 2x$

10.



$y \leq 3$

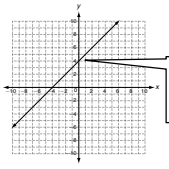
LESSON 6-5

Reteach

Solving Linear Inequalities

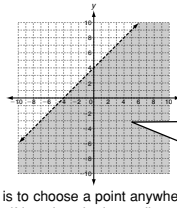
When graphing an equation, the solutions are all the points on the line. When graphing an inequality, the solutions are all the points above or below the line (and may include the line).

Graph $y = x + 4$.



Solutions are **only** on the line.

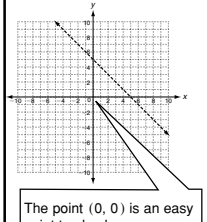
Graph $y < x + 4$.



Solutions are everywhere below the line. Because the line is dashed, the solutions are not on the line.

One method of determining which side to shade is to choose a point anywhere on the graph (except on the line). Then substitute to determine if it makes the inequality true.

The boundary line for the inequality $y > -x + 5$ is graphed below. Shade the correct side.



The point (0, 0) is an easy point to check.

Step 1: Choose a point.

Step 2: Substitute (0, 0) in the inequality $y > -x + 5$.

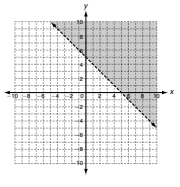
$y > -x + 5$

$0 \stackrel{?}{>} -0 + 5$

$0 \stackrel{?}{>} 5$

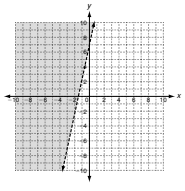
The statement is false.

Step 3: Because (0, 0), which is below the line, resulted in a false statement, it is not a solution. Shade above the line.

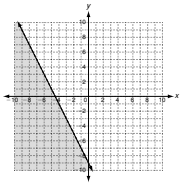


The boundary lines for each inequality are graphed below. Shade the correct side

1. $y > 5x + 7$



2. $y < -2x - 9$



3. $x > 3$