

4-5 Practice

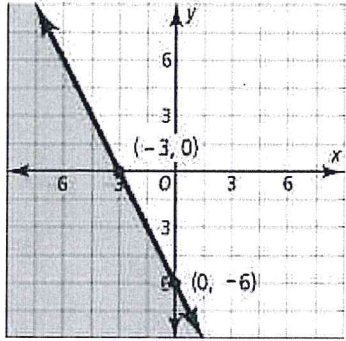
Write a linear inequality that represents each graph.

1.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\begin{matrix} (-3, 0) & (0, -6) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

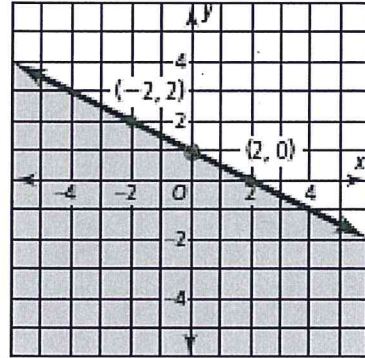
$$\frac{-6 - 0}{0 - (-3)} = \frac{-6}{3}$$



$m = -2$ solid below
 $b = -6$

$$y \leq -2x - 6$$

2.



$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

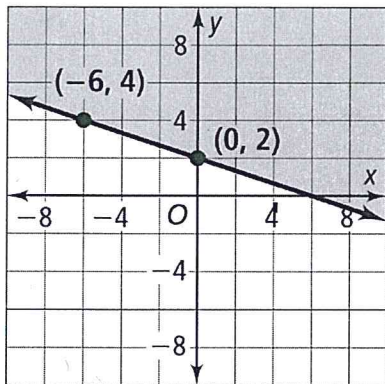
$$\begin{matrix} (-2, 2) & (2, 0) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$\frac{0 - 2}{2 - (-2)} = \frac{-2}{4}$$

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

$m = -\frac{1}{2}$
 $b = 1$
solid below

3.



$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\begin{matrix} (-6, 4) & (0, 2) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$\frac{2 - 4}{0 - (-6)} = \frac{-2}{6}$$

$$y \geq -\frac{1}{3}x + 2$$

$m = -\frac{1}{3}$ solid above
 $b = 2$

4. A friend has \$75 to buy some new shirts and pants. Each shirt s costs \$11. Each pair of pants p costs \$19.

s = shirts
 p = pants

a. Write and graph an inequality that shows how many shirts and pants your friend can buy.

$$11s + 19p \leq 75$$

b. Which side of the boundary line should you shade? below

c. What inequality symbol did you use? Explain.

\leq (less than or equal to) because you cannot spend more than \$75

5. Admission to the movie theater costs \$7.50 for adults and \$3.50 for students. The theater must bring in at least \$200 per movie. Write an inequality for the number of tickets the theater needs to sell to make a profit. If the theater sells 15 adult tickets, how many student tickets do they need to sell to make a profit?

$a =$ adult tickets

$s =$ student tickets

$$7.50a + 3.50s \geq 200$$

$$\begin{array}{r}
 7.50(15) + 3.50s \geq 200 \\
 112.50 + 3.50s \geq 200 \\
 -112.50 \qquad \qquad -112.50 \\
 \hline
 3.50s \geq 87.50 \\
 \frac{3.50s}{3.50} \geq \frac{87.50}{3.50} \\
 s \geq 25
 \end{array}$$

6. Each child at the birthday party was given \$5 to spend at the arcade on games and rides. Each game costs \$0.25 and each ride costs \$0.50. Write an inequality for the number of games and rides a child can enjoy for \$5.

$g =$ games

$r =$ rides

$$0.25g + 0.50r \leq 5$$

7. You and some friends have \$30. You want to order large pizzas (p) that are \$10 each and drinks (d) that cost \$1 each. Write an inequality that shows how many pizzas and drinks can you order?

$p =$ pizza

$d =$ drinks

$$10p + d \leq 30$$

8. Tickets to a play cost \$5 at the door and \$4 in advance. The theatre club wants to raise at least \$400 from the play. Write an inequality for the number of tickets the theatre club needs to sell. If the club sells 40 tickets in advance, how many do they need to sell at the door to reach their goal?

$d =$ door tickets

$a =$ advance tickets

$$5d + 4a \geq 400$$

$$\begin{array}{r}
 a = 40 \\
 5d + 4(40) \geq 400 \\
 5d + 160 \geq 400 \\
 -160 \qquad \qquad -160 \\
 \hline
 5d \geq 240 \\
 \frac{5d}{5} \geq \frac{240}{5} \\
 d \geq 48
 \end{array}$$

Write a linear inequality of each graph
Kuta Software - Infinite Algebra 1

Name _____

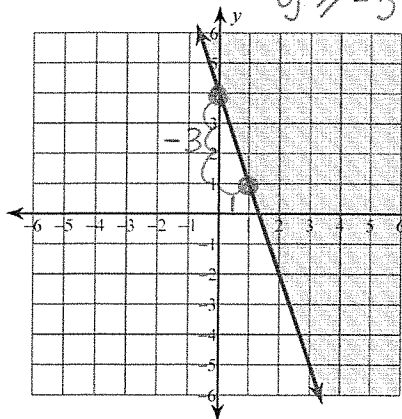
Date _____ Period _____

	Above	Below
Solid	\geq	\leq
Dotted	$>$	$<$

1)

Equation:

$y \geq -3x + 4$



m: -3

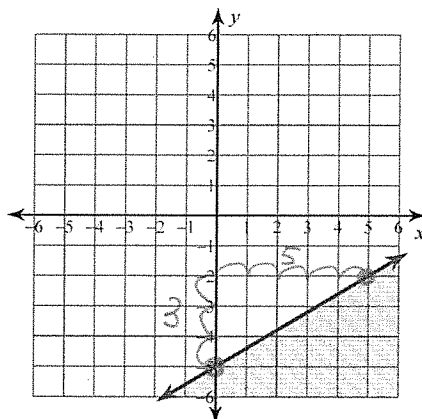
b: 4

Above / Below

Solid / Dotted

2)

Equation: $y \leq \frac{3}{5}x - 5$



m: $\frac{3}{5}$

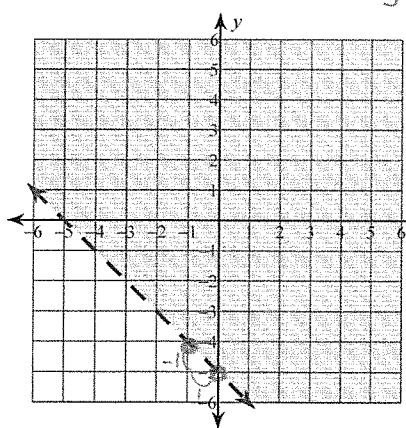
b: -5

Above / Below

Solid / Dotted

3)

Equation: $y > -x - 5$



m: -1

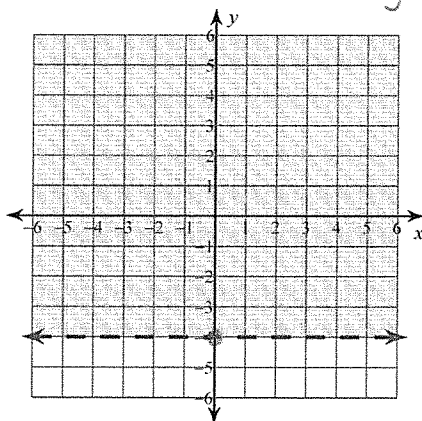
b: -5

Above / Below

Solid / Dotted

4)

Equation: $y > -4$



m: 0

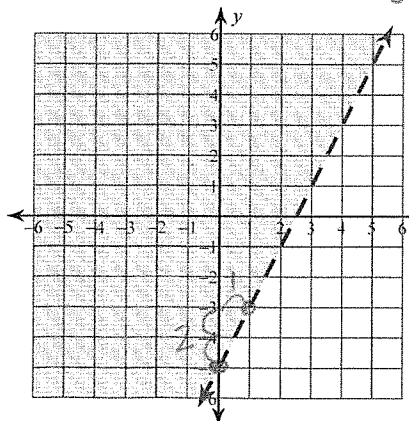
b: -4

Above / Below

Solid / Dotted

5)

Equation: $y > 2x - 5$



m: 2

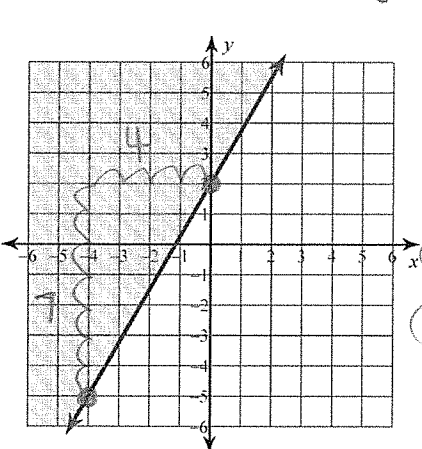
b: -5

Above / Below

Solid / Dotted

6)

Equation: $y \geq \frac{7}{4}x + 2$



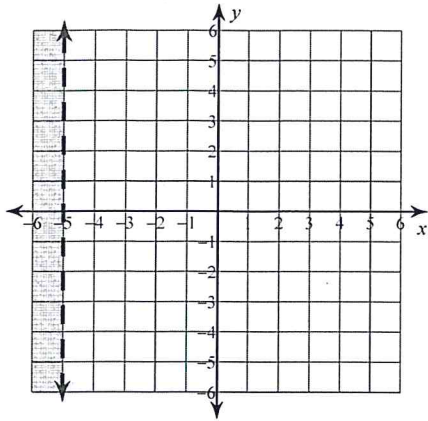
m: $\frac{7}{4}$

b: 2

Above / Below

Solid / Dotted

7) Equation: $x < -5$



m: undefined

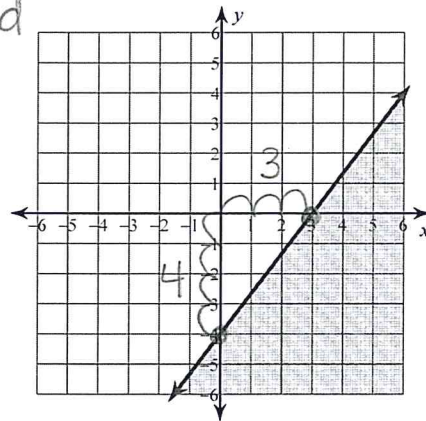
b: -

Above / Below

Solid / Dotted

8)

Equation: $y \leq \frac{4}{3}x - 4$



m: 4/3

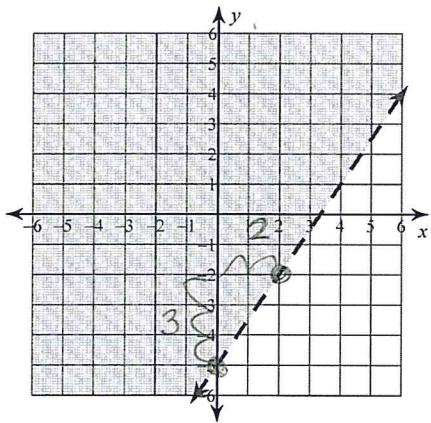
b: -4

Above / Below

Solid / Dotted

9)

Equation: $y > \frac{3}{2}x - 5$



m: 3/2

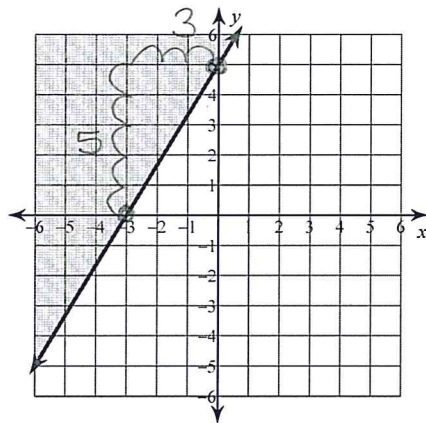
b: -5

Above / Below

Solid / Dotted

10)

Equation: $y \geq \frac{5}{3}x + 5$



m: 5/3

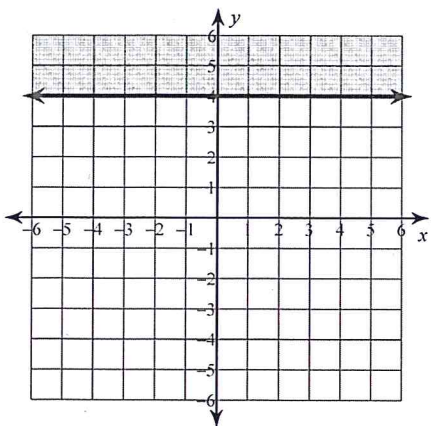
b: 5

Above / Below

Solid / Dotted

11)

Equation: $y \geq 4$



m: 0

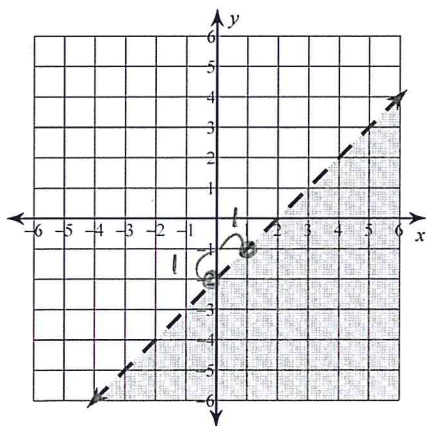
b: 4

Above / Below

Solid / Dotted

12)

Equation: $y < x - 2$



m: 1

b: -2

Above / Below

Solid / Dotted