

Fall 2018 Benchmark #2 Study Guide

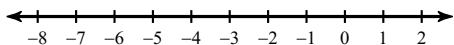
Solve each equation.

1) $-3n + 3 - 7 = 8$

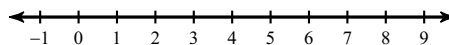
2) $8k - 2 + 1 = -1$

Solve each inequality and graph its solution.

3) $4 - 4n + 2 \geq 18$

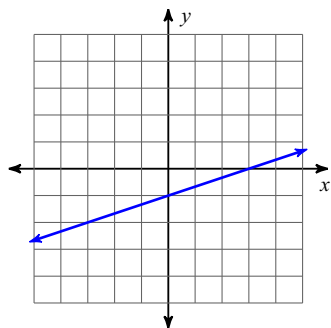


4) $2k + 7 - 3 > 12$

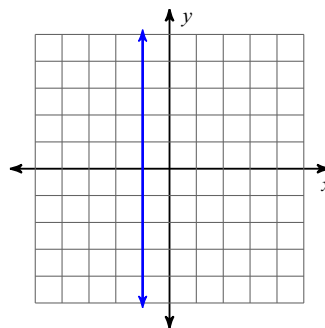


Find the slope of each line.

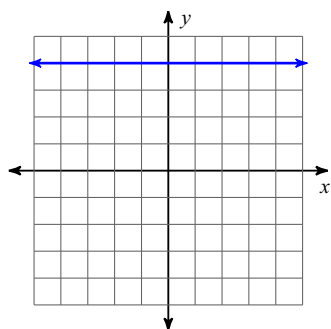
5)



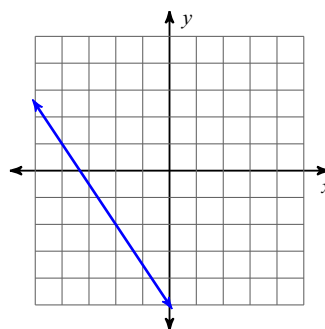
6)



7)



8)



Find the slope of the line through each pair of points.

9) $(-3, 11), (-7, -5)$

10) $(-11, 3), (-11, -8)$

11) $(-6, 17), (19, 17)$

12) $(9, -16), (-6, -7)$

Write each equation in slope-intercept form, then find the slope and y-intercept of each line.

13) $3x + 2y = 8$

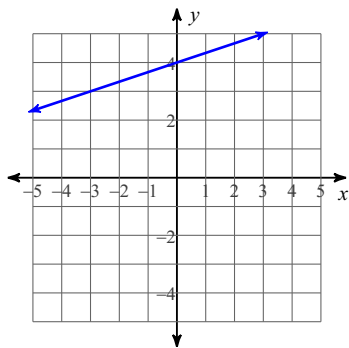
14) $x - 5y = -25$

15) $y = 1$

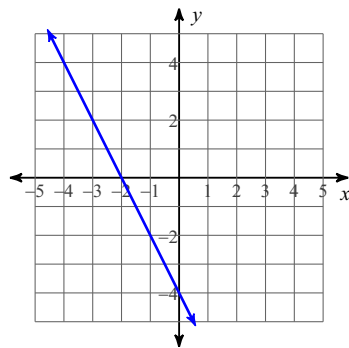
16) $x = -2$

Write the slope-intercept form of the equation of each line.

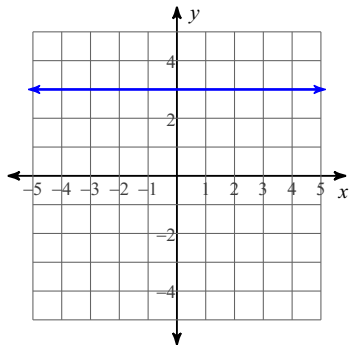
17)



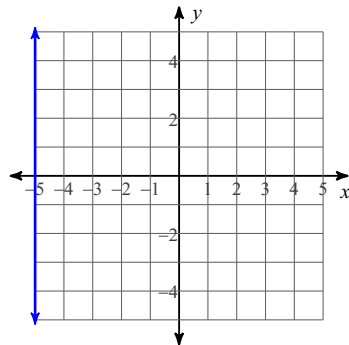
18)



19)



20)



Write the slope-intercept form of the equation of the line through the given point with the given slope.

21) through: $(5, 3)$, slope = $\frac{2}{5}$

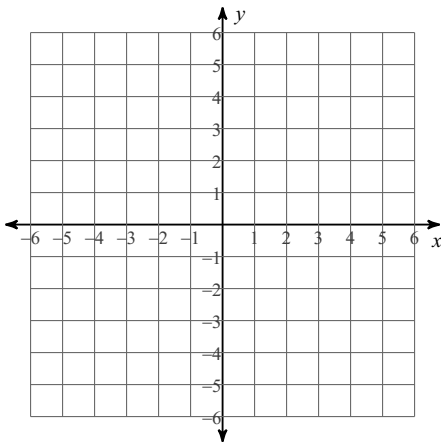
22) through: $(-1, 4)$, slope = 0

23) through: $(-1, -1)$, slope = -1

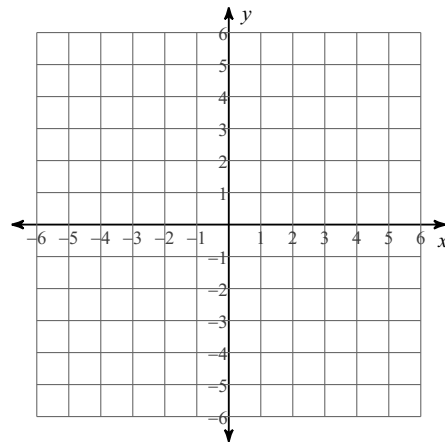
24) through: $(1, -2)$, slope = undefined

Sketch the graph of each line.

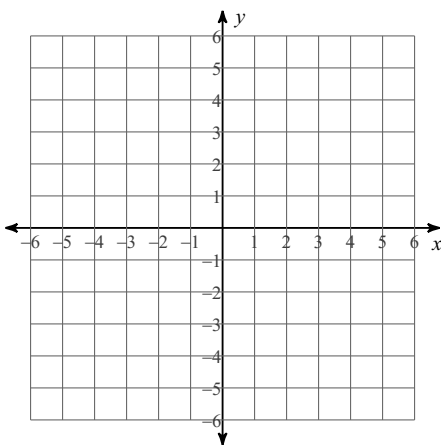
25) $y = 3$



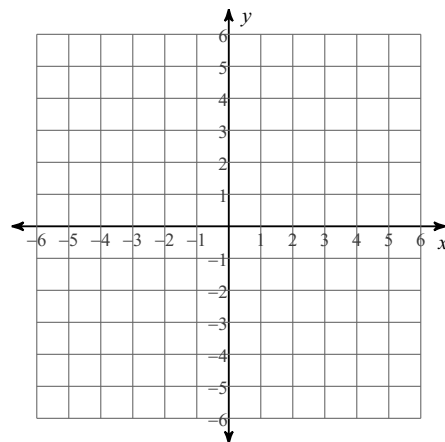
26) $x = 1$



27) $y = \frac{5}{2}x - 5$



28) $2x + y = 5$



Solve each system by substitution.

$$\begin{aligned} 29) \quad y &= 8x - 12 \\ y &= 6x - 8 \end{aligned}$$

$$\begin{aligned} 30) \quad y &= -6x - 5 \\ y &= x + 9 \end{aligned}$$

$$\begin{aligned} 31) \quad -8x + 2y &= 8 \\ y &= 4x + 6 \end{aligned}$$

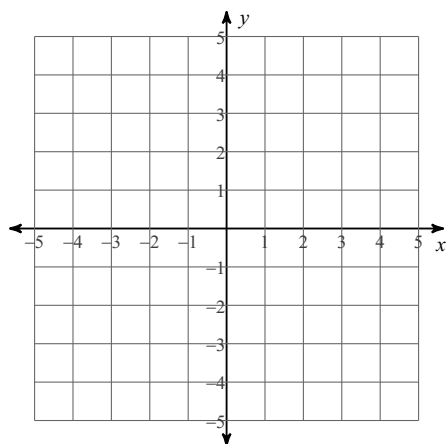
$$\begin{aligned} 32) \quad -14x + 2y &= -10 \\ y &= 7x - 5 \end{aligned}$$

$$\begin{aligned} 33) \quad y &= -6x - 21 \\ -5x - 4y &= 8 \end{aligned}$$

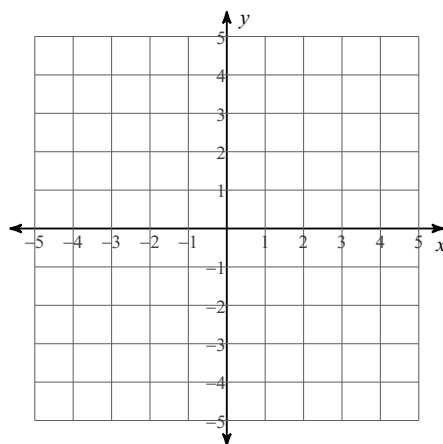
$$\begin{aligned} 34) \quad -6x + 6y &= 18 \\ y &= -4x + 23 \end{aligned}$$

Solve each system by graphing.

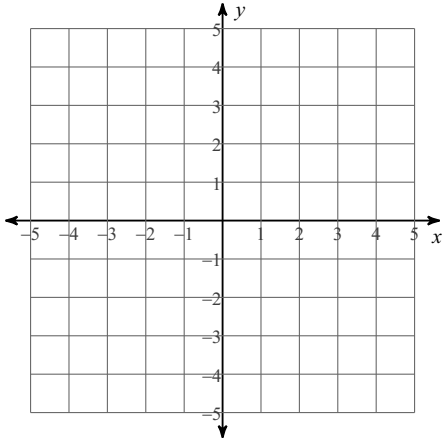
$$\begin{aligned} 35) \quad y &= -\frac{4}{3}x - 1 \\ y &= -\frac{4}{3}x - 4 \end{aligned}$$



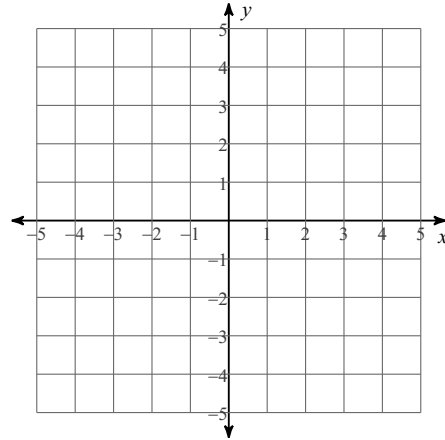
$$\begin{aligned} 36) \quad y &= \frac{7}{2}x + 4 \\ y &= \frac{1}{2}x - 2 \end{aligned}$$



37) $y = x + 4$
 $y = -2x - 2$



38) $4x - y = -1$
 $x + y = -4$



39) Compare the slopes and y intercepts of the following lines.

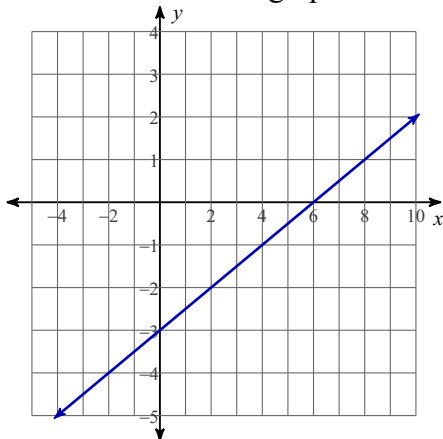
Line 1 : $3x - 4y = 4$
 Line 2: $5x - 4y = -12$

40) Compare the y intercepts of the following lines.

Line 1 : $7x + 8y = 56$
 Line 2: $4x - 3y = -21$

41) Identify the slope and y-intercept of each.
 Compare the slope and y-intercepts of each equation.

Line 1 : $3x - 4y = 4$ (solve for y first)
 Line 2: Line on the graph



42) Write the domain and range for the following relation.
 $(3,4)$ $(5, 7)$ $(7, 9)$ $(12, 18)$

43) Determine which relations are functions.

- A) $(1,3)$, $(5, 6)$, $(7, 8)$, $(9,10)$
- B) $(3,4)$, $(5, 6)$, $(7, 8)$, $(5,10)$
- C) $(3,4)$, $(5, 6)$, $(7, 8)$, $(9,10)$
- D) $(3,4)$, $(5, 6)$, $(3, 8)$, $(9,10)$

44) Sketch two relations that are functions.

45) Sketch two relations that are not functions.

46) Sketch a line that has a positive slope.

47) Sketch a line that has a negative slope.

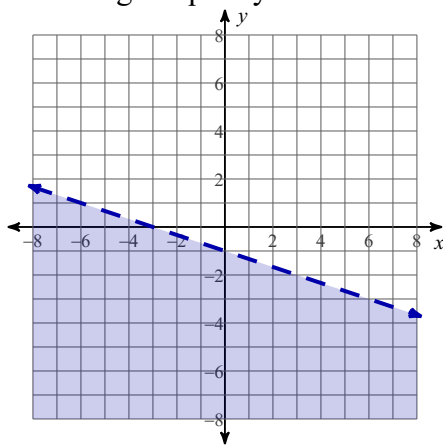
48) Sketch a line that has a zero slope.

49) Sketch a line that has an undefined slope.

50) Sketch a horizontal line.

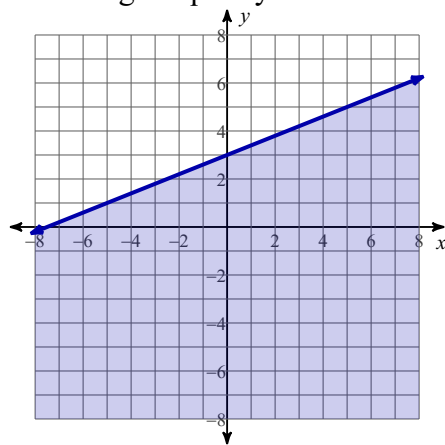
51) Sketch a vertical line.

52) Circle the points that are solutions the following inequality.



- A) $(3,-2)$
- B) $(4,6)$
- C) $(-4, -6)$
- D) $(-7,1)$

53) Circle the points that are solutions the following inequality.

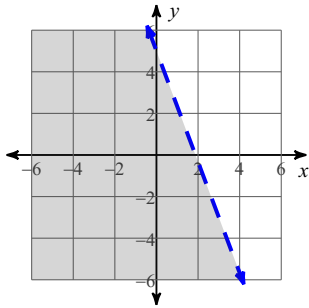


- A) $(6,4)$
- B) $(0,8)$
- C) $(0,3)$
- D) $(-4,3)$

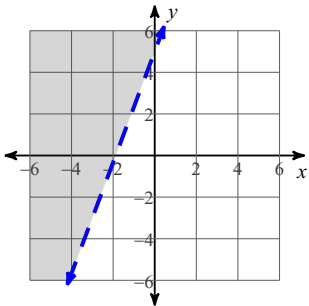
Sketch the graph of each linear inequality.

54) $y < \frac{8}{3}x + 5$

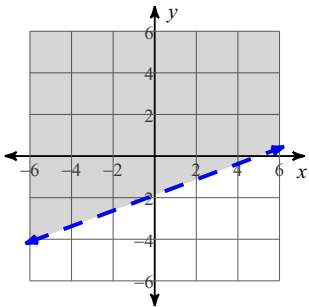
A)



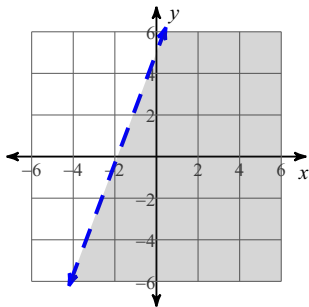
B)



C)

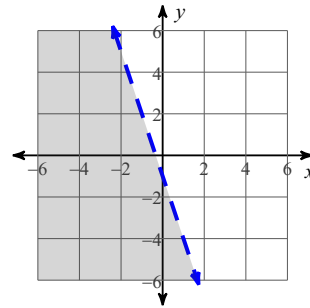


D)

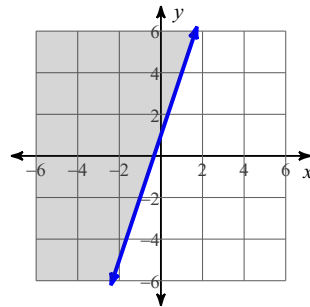


55) $3x + y \leq 1$

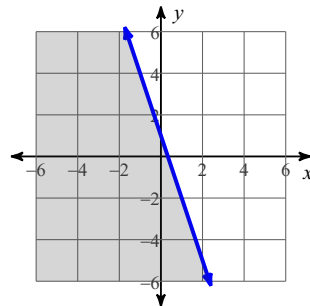
A)



B)



C)



D)

