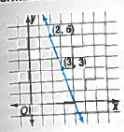
CHAPTER 7 Test

1. Describe how changing each of the following affects the graph of a linear function.
   a. slope
   b. y-intercept
2. Compare and contrast the graphs of $y = 4x - 1$, $y = x - 1$, and $y = 3x - 1$. Verify by graphing the equations.

Determine the slope of each line.

3. 

4. 

5. the line passing through points at (1, −2) and (6, 0)

Write the point-slope form of an equation for each line passing through the given point and having the given slope.

6. (5, 6), $m = 3$
7. (−3, 1), $m = -2$
8. (−4, 8), $m = 0$

Write an equation in slope-intercept form of the line passing through each pair of points.

9. (1, 5) and (2, 8)
10. (3, 1) and (−7, 11)
11. (−4, 0) and (2, 3)

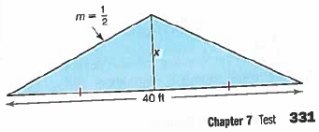
12. **Music** A disc jockey notices that as the music gets faster, more people start dancing. Would a scatter plot showing speed of music and number of dancers have a *positive* relationship, *negative* relationship, or *no* relationship?

Graph each equation.

13. $x + y = 2$
14. $x + 3y = 3$
15. $2x - 4y = 12$
16. $y = 2x - 5$
17. $y = \frac{1}{3}x + 2$
18. $y = -1$

19. Are the graphs of the equations *parallel*, *perpendicular*, or *neither*?
$y = -4x + 9$
$y = \frac{1}{4}x - 6$

20. **Construction** The *pitch* of a roof describes its steepness. Suppose a roof is 40 feet wide and its pitch is $\frac{1}{2}$. Find x, its height above the rafters at its peak. (*Hint*: Use $\frac{\text{rise}}{\text{run}}$.)



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Chapter 7 Test 331

Answer Key Practice Test p.331

1) a. slope → changing the slope affects the steepness of the graph

+ slope ↑ } slope becomes steeper
− slope ↓ }

b. y-intercept → shifts graph up or down

y-int increases, graph shifts up
y-int decreases, graph shifts down

2) Each graph has a positive slope and a y-intercept of −1. The graph of $y = 4x - 1$ is the steepest, and the graph of $y = x - 1$ is the least steep.

3) $m = \frac{-3}{1}$ 4) $m = 0$ 5) $m = \frac{2}{5}$

6) $y + -6 = 3(x + -5)$

7) $y + -1 = -2(x+3)$

8) $y + -8 = 0$ or $y = 8$

9) $y = 3x+2$

10) $y = -x+4$

11) $y = \frac{1}{2}x + 2$

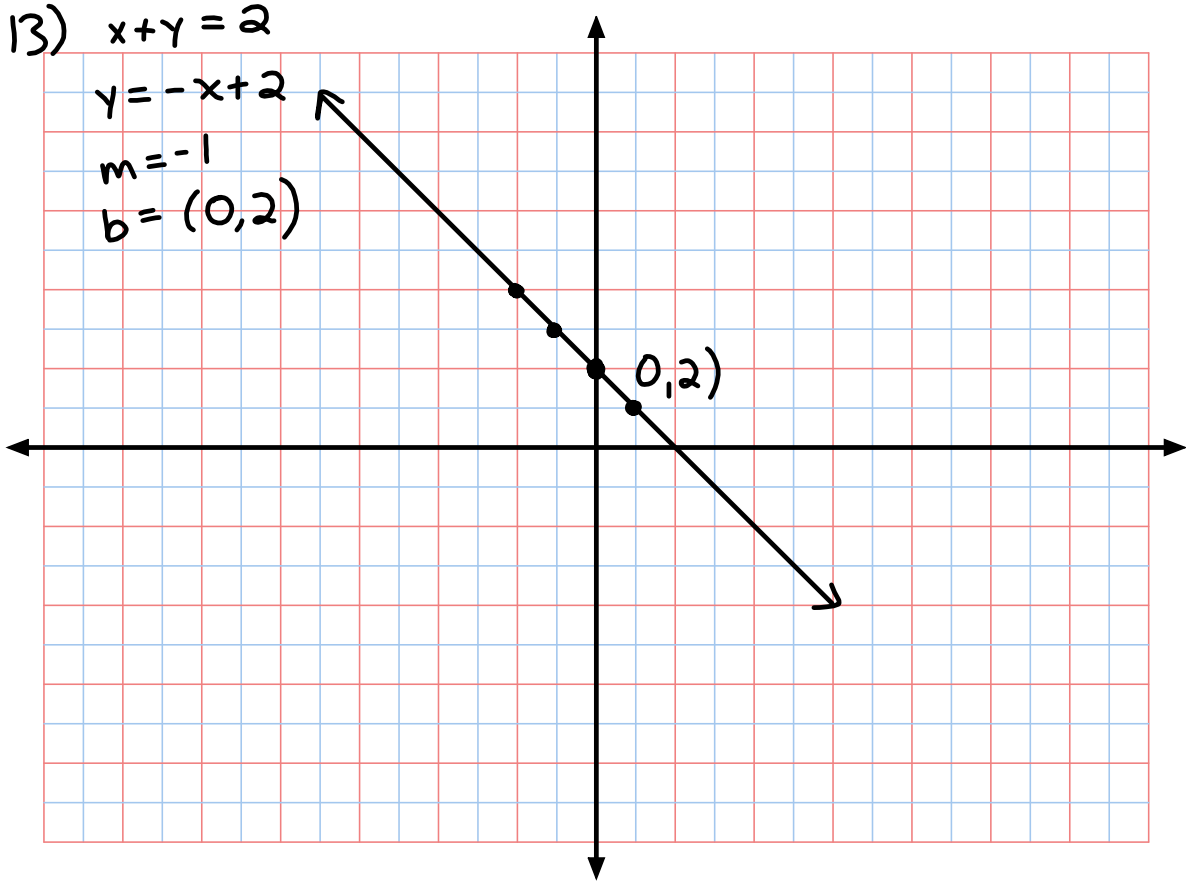
12) positive relationship

13) $x+y = 2$

$y = -x+2$

$m = -1$

$b = (0,2)$



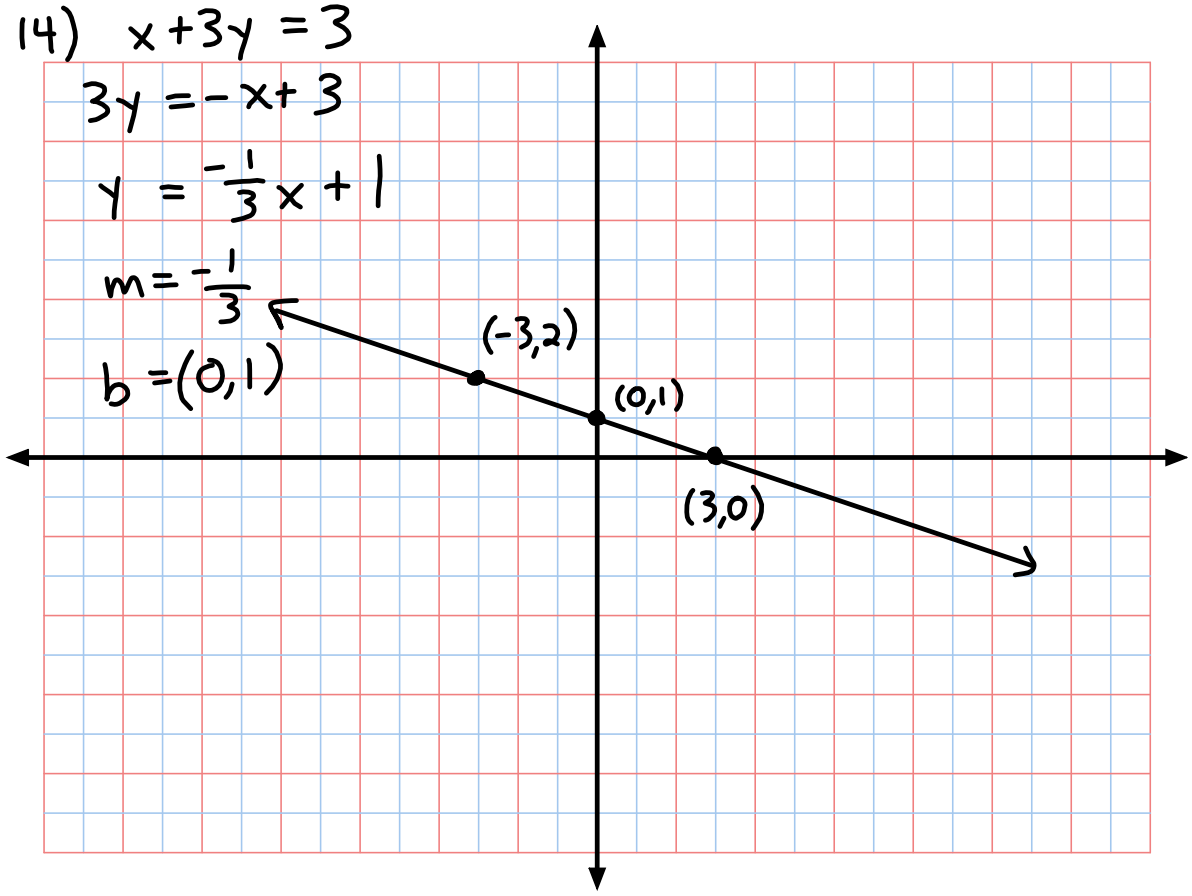
14) $x+3y=3$

$3y=-x+3$

$y=\frac{-1}{3}x+1$

$m=\frac{-1}{3}$

$b=(0,1)$



15) $2x-4y=12$

x-int: $2x=12$

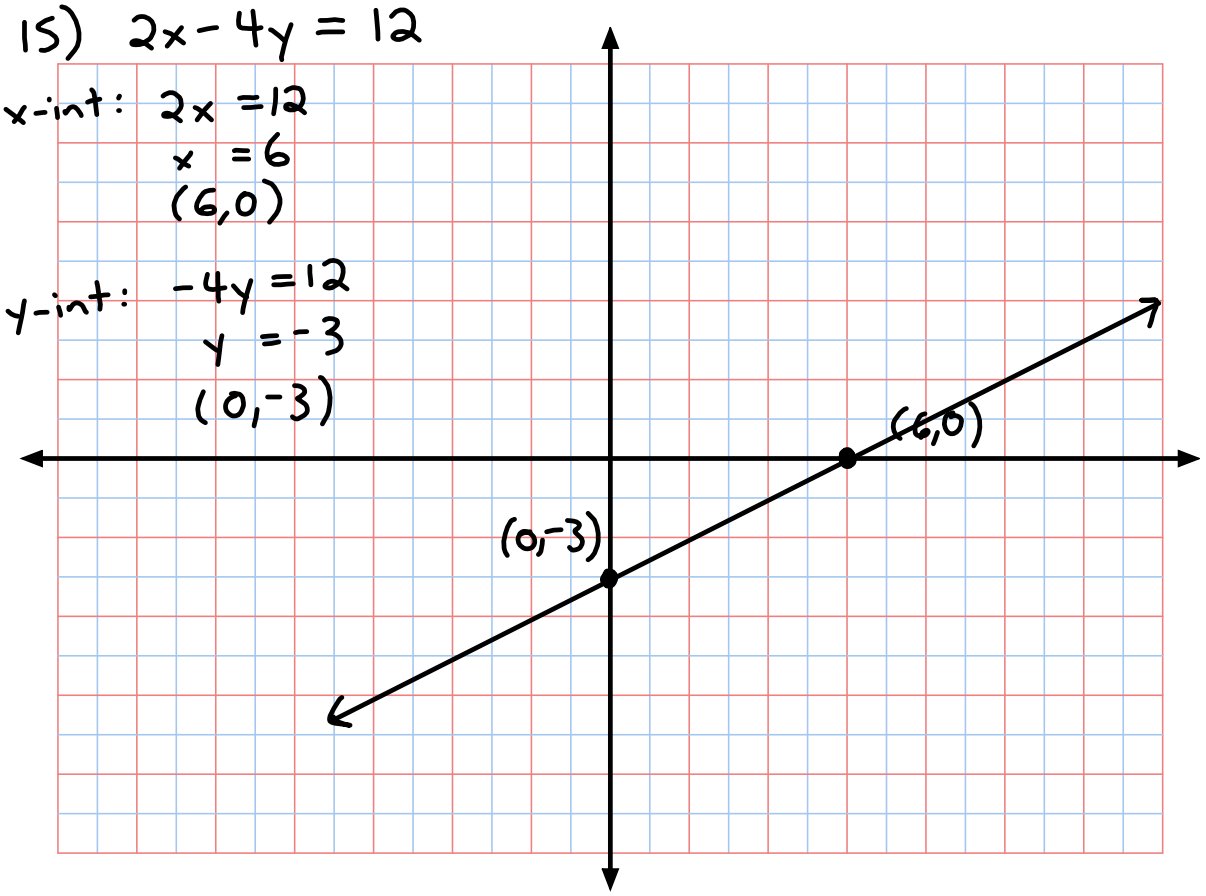
$x=6$

$(6,0)$

y-int: $-4y=12$

$y=-3$

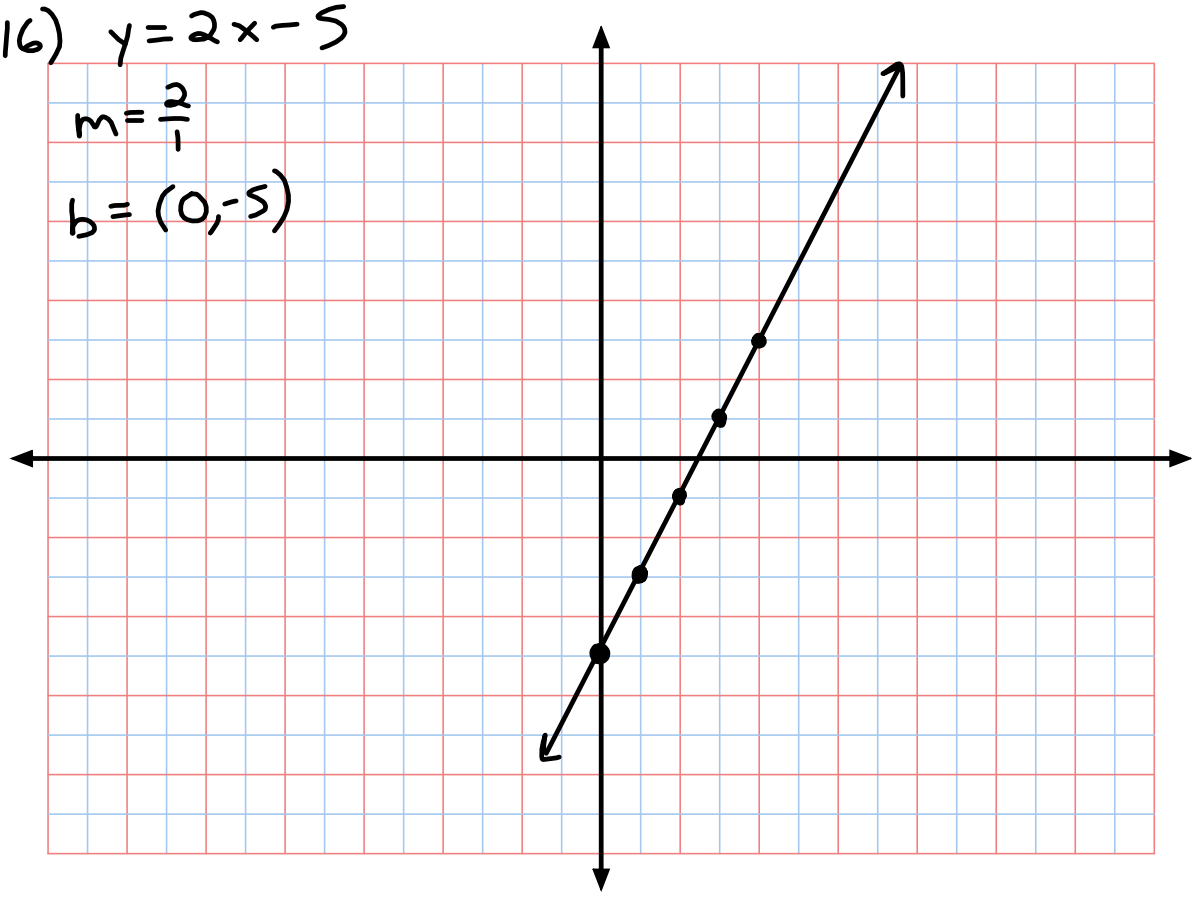
$(0,-3)$



16) $y = 2x - 5$

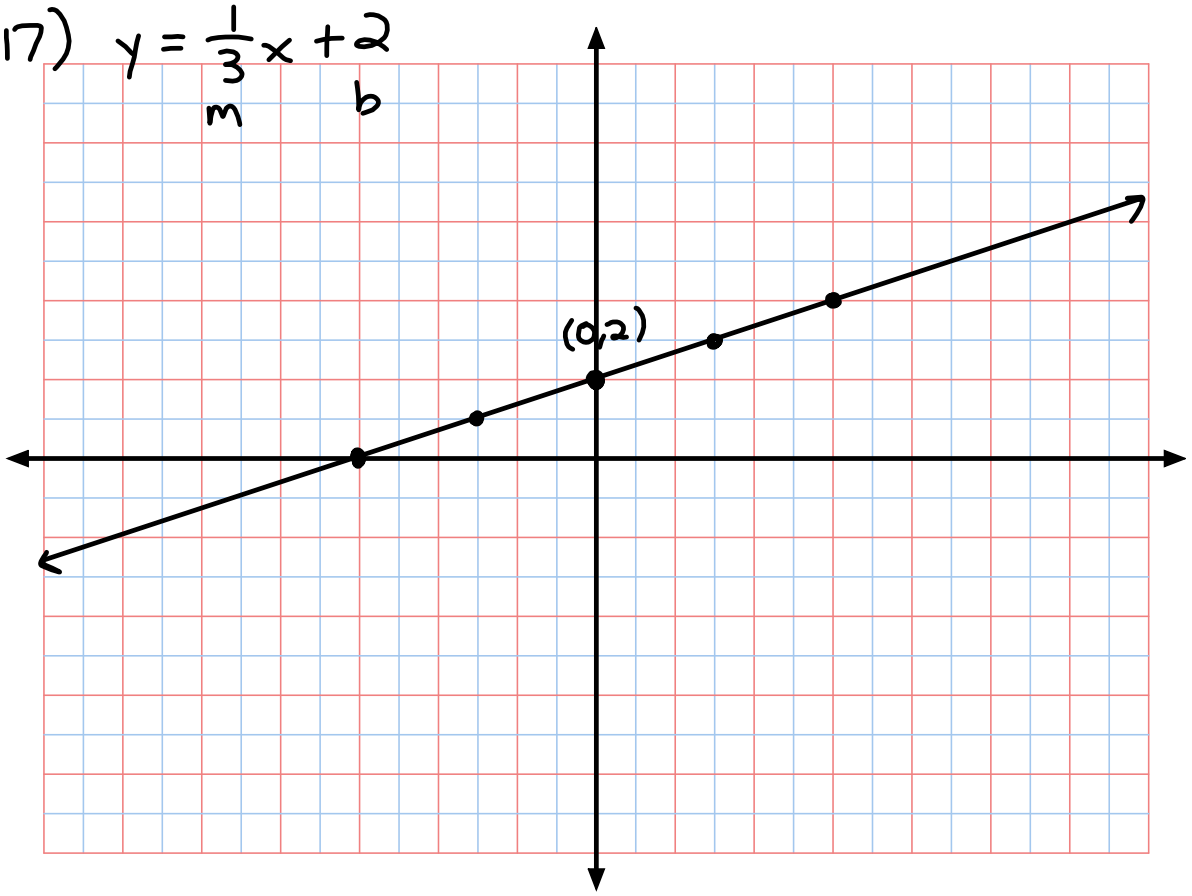
$m = \frac{2}{1}$

$b = (0, -5)$



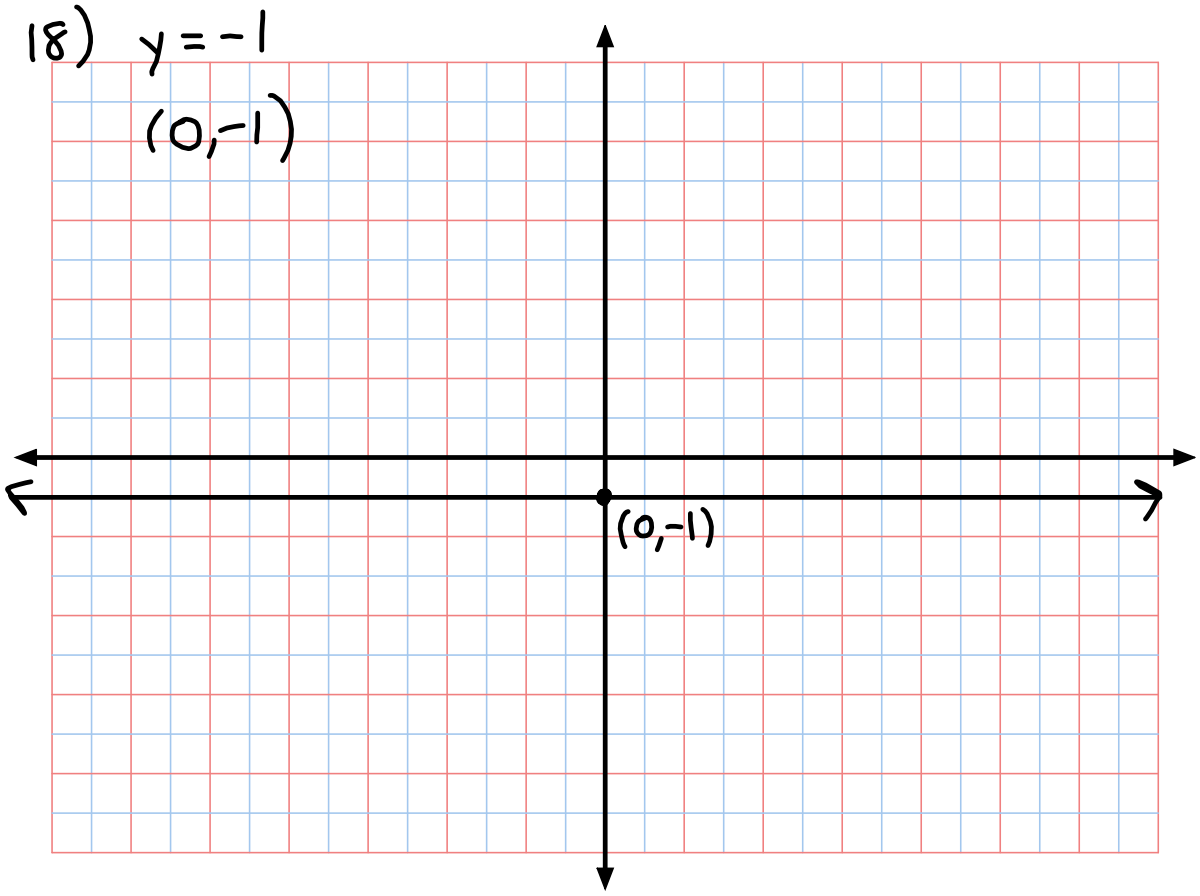
17) $y = \frac{1}{3}x + 2$

m b



18) $y = -1$

$(0,-1)$

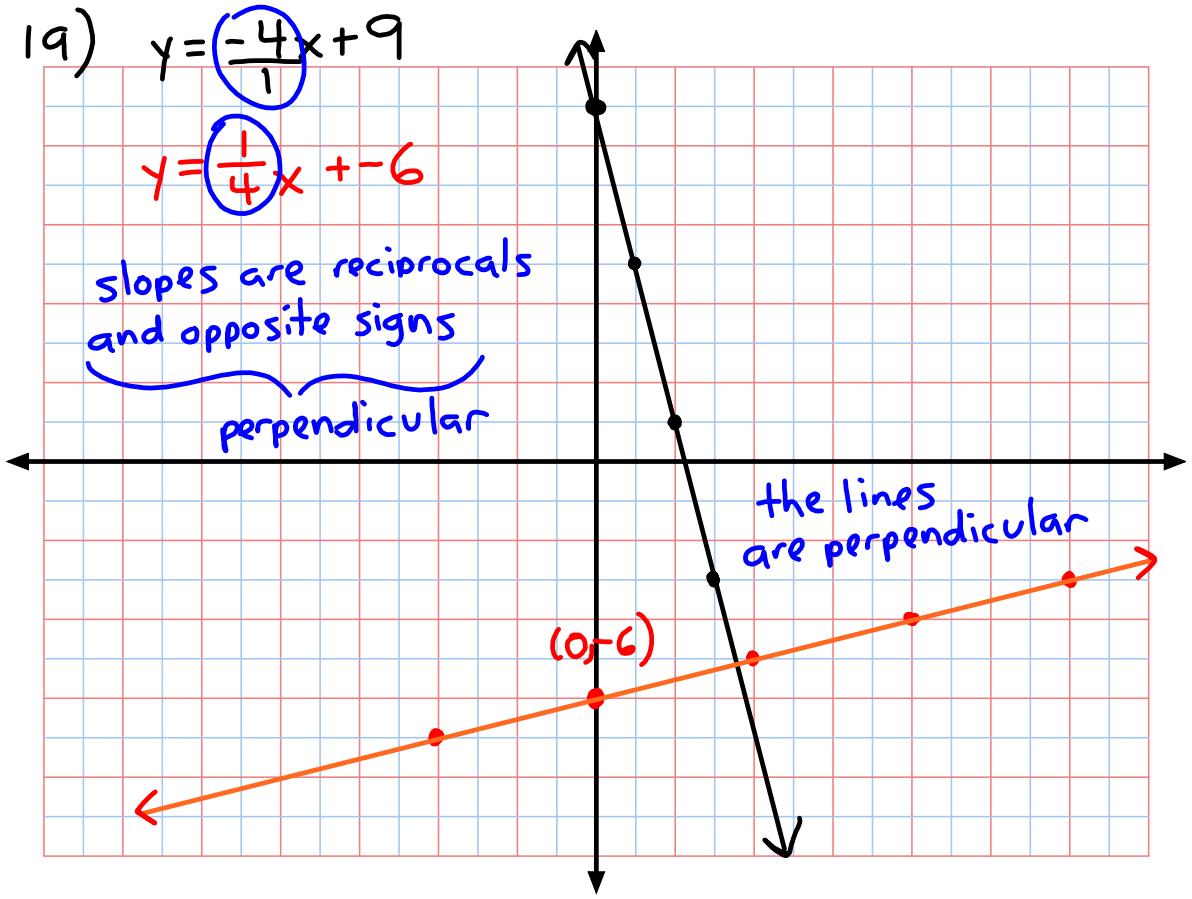


19) $y = \frac{-4}{1}x + 9$

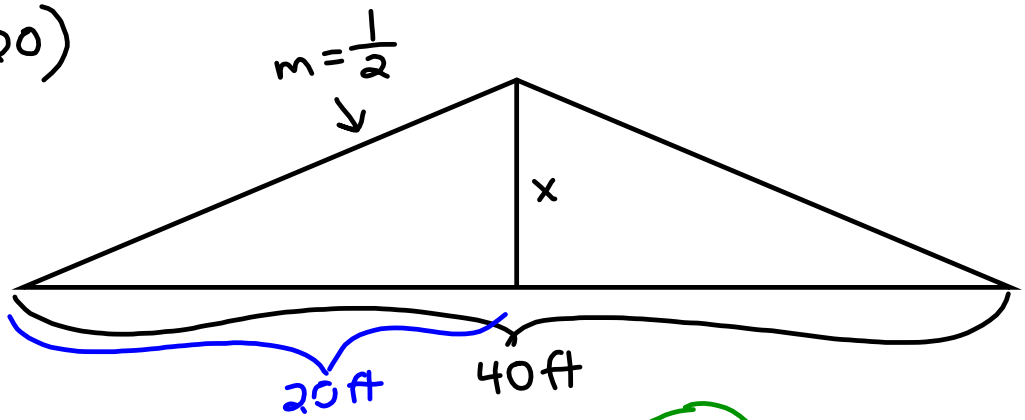
$y = \frac{1}{4}x + -6$

slopes are reciprocals and opposite signs

perpendicular



20)



$m = \frac{1 \times 10}{2 \times 10} = \frac{x}{20\text{ ft}} \rightarrow x = 1 \times 10 = 10\text{ ft}$