

Directions: Write the slope-intercept form of the equation of each line given the slope and y-intercept.

1. Slope = 5, y-intercept = -3

$$y = mx + b$$

$$y = 5x - 3$$

2. Slope = 1/3, y-intercept = 5

$$y = \frac{1}{3}x + 5$$

3. Slope = 0, y-intercept = 2

$$y = 0x + 2$$

$$y = 2$$

4. Slope = -1, y-intercept = 3

$$y = -1x + 3$$

$$y = -x + 3$$

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

5. Through: (5, 3), slope = 4/5

$$y = mx + b$$

$$3 = \left(\frac{4}{5}\right)5 + b$$

$$3 = 4 + b \quad -1 = b$$

$$y = \frac{4}{5}x - 1$$

6. Through: (-3, 2), slope = -2/3

$$y = mx + b$$

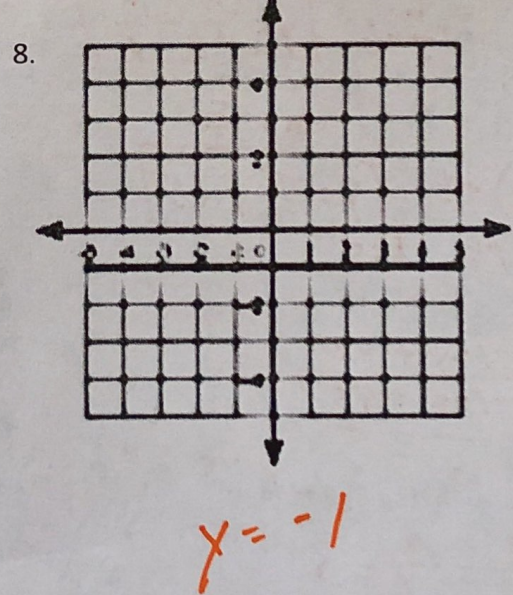
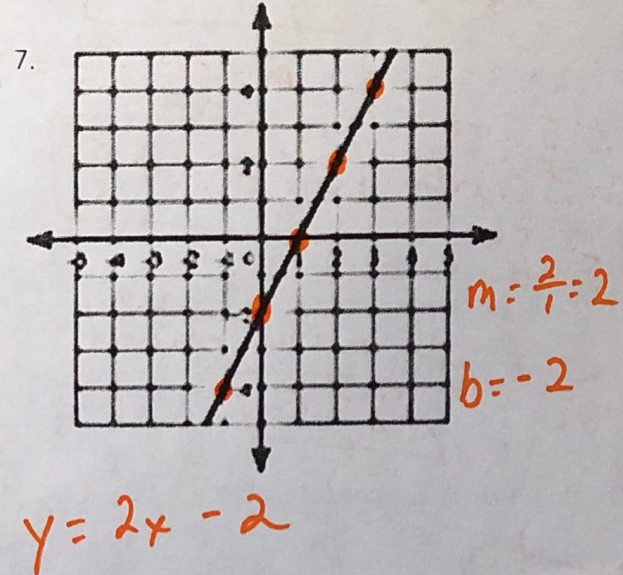
$$2 = \left(-\frac{2}{3}\right)(-3) + b$$

$$2 = 2 + b \quad b = 0$$

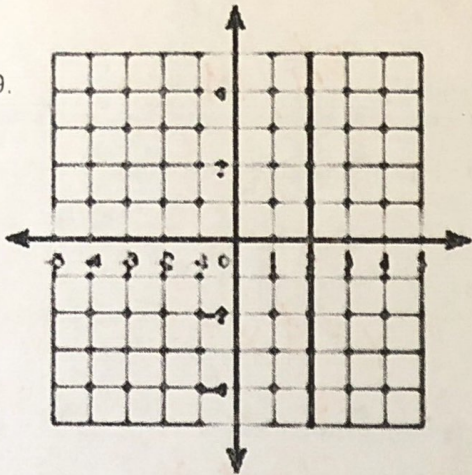
$$y = -\frac{2}{3}x + 0$$

$$y = -\frac{2}{3}x$$

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

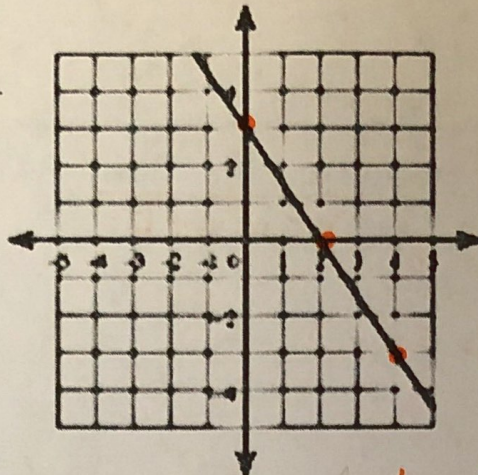


9.



$$x = 2$$

10.



$$m = -\frac{3}{2} \quad b = 3$$

$$y = -\frac{3}{2}x + 3$$

Directions: Write the slope-intercept form of the equation of the line with the given information.

11. Through: $(-5, -5)$ and $(1, -3)$

$$y = mx - b$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - (-5)}{1 - (-5)} = \frac{2}{6} = \frac{1}{3}$$

$$-3 = \frac{1}{3}(1) + b \quad -\frac{10}{3} = b \quad \boxed{y = \frac{1}{3}x - \frac{10}{3}}$$

13. Through: $(4, -5)$, parallel to $y = (-5/2)x + 5$

$$m = -\frac{5}{2}$$

$$-5 = -\frac{5}{2}(4) + b \quad \boxed{y = -\frac{5}{2}x + 5}$$

$$-5 = -10 + b \quad b = 5$$

15. $y - 5 = -10(x - 4)$

$$y - 5 = -10x + 40$$

$$\boxed{y = -10x + 45}$$

17. Through: $(3, -3)$ and $(4, 0)$

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

$$y = mx + b$$

$$0 = 3(4) + b$$

$$-12 = b$$

$$\boxed{y = 3x - 12}$$

12. Through: $(-5, 1)$, parallel to $y = x + 5$

$$m = 1$$

$$1 = 1(-5) + b$$

$$6 = b \quad \boxed{y = x + 6}$$

14. Through: $(4, 3)$ and $(1, 2)$

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

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

$$3 = \frac{1}{3}(4) + b$$

$$3 = \frac{4}{3} + b$$

$$\frac{5}{3} = b$$

$$\boxed{y = \frac{1}{3}x + \frac{5}{3}}$$

16. Through: $(0, 2)$, perpendicular to $y = 1$

$$m = \text{undefined}$$

$$\boxed{x = 0}$$

18. Through $(-2, 5)$, perpendicular to $y = 2x - 5$

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

$$5 = \left(-\frac{1}{2}\right)(-2) + b$$

$$5 = 1 + b$$

$$4 = b$$

$$\boxed{y = -\frac{1}{2}x + 4}$$