

ANSWERS

Section 3.1

Determine the slope between the two points.

1. $(2, 3), (4, 0)$ $m = -3/2$
2. $(-2, 3), (2, 1)$ $m = -1/2$
3. $(-3, -1), (5, -1)$ $m = 0$
4. $(2, -8), (2, 4)$ $m = \text{undefined}$
5. $(-5, -4), (-1, 3)$ $m = 7/4$

Calculate the slope perpendicular to the given slope.

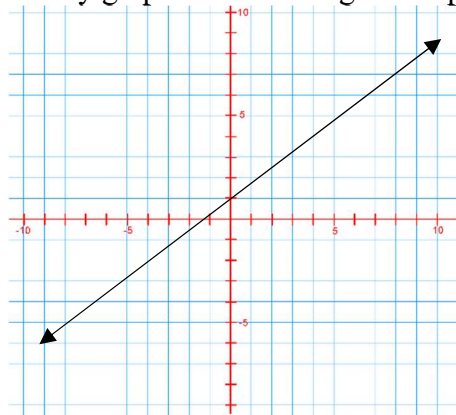
6. $m = 2/5$ $m = -5/2$
7. $m = -1/2$ $m = 2$
8. $m = 7$ $m = -1/7$
9. $m = -3$ $m = 1/3$
10. $m = 0$ $m = \text{undefined}$

Determine whether the lines are parallel, perpendicular, or neither.

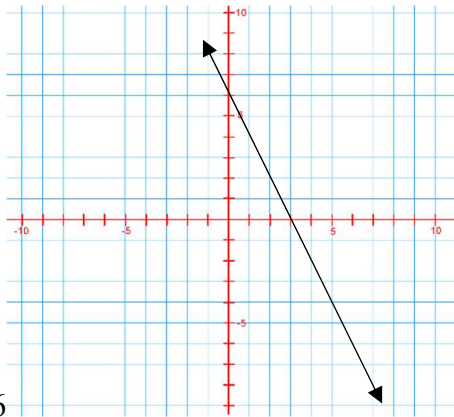
11. Line A: through $(3, -1)$ and $(6, -4)$ $\text{Line A slope} = -1$; Line B: through $(-4, 5)$ and $(-2, 7)$ $\text{Line B slope} = 1$, Lines are perpendicular
12. Line A: through $(1, 5)$ and $(3, -2)$ $\text{Line A slope} = -7/2$; Line B: through $(-3, 2)$ and $(4, 0)$ $\text{Line B slope} = -2/7$, Neither

Section 3.2

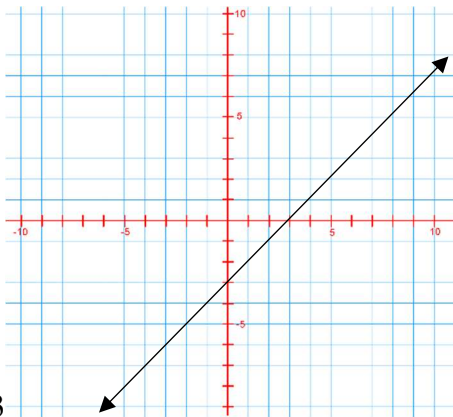
On graph paper, accurately graph the line using the slope and y-intercept.



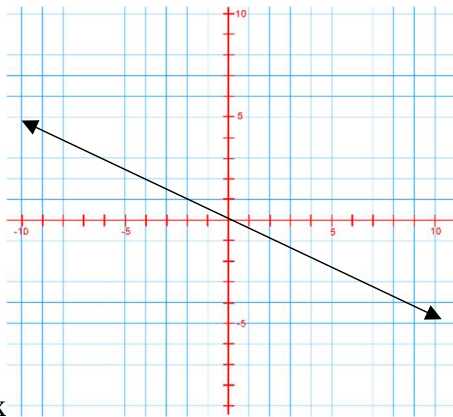
13. $y = \frac{3}{4}x + 1$



14. $y = -2x + 6$

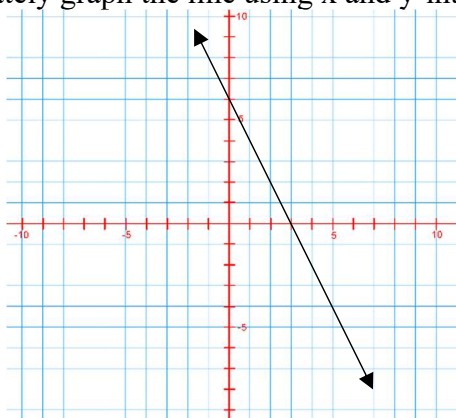


15. $y = x - 3$

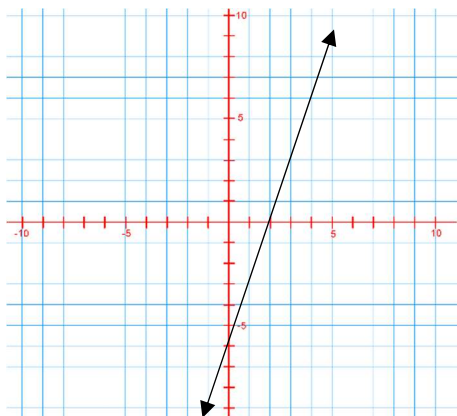


16. $y = -\frac{1}{2}x$

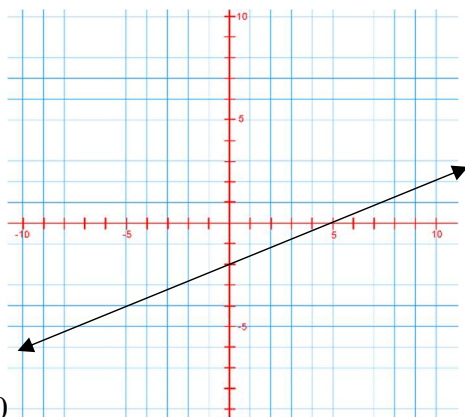
On graph paper, accurately graph the line using x and y-intercepts.



17. $4x + 2y = 12$



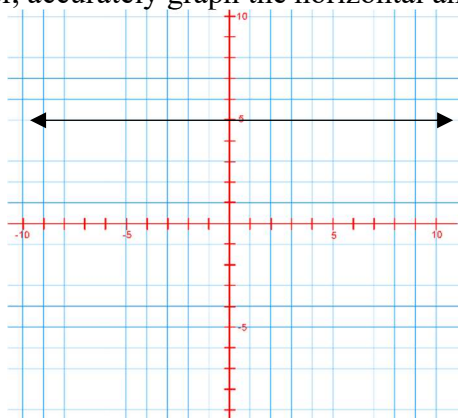
18. $3x - y = 6$



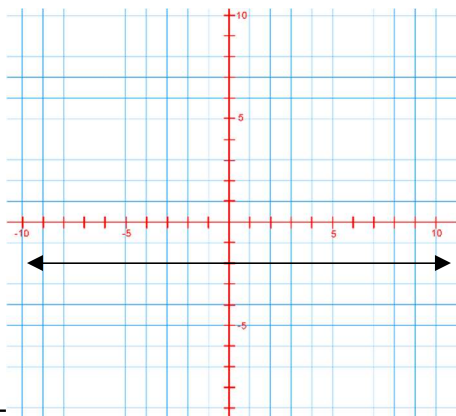
19. $2x - 5y = 10$

On graph paper, accurately graph the horizontal and vertical lines.

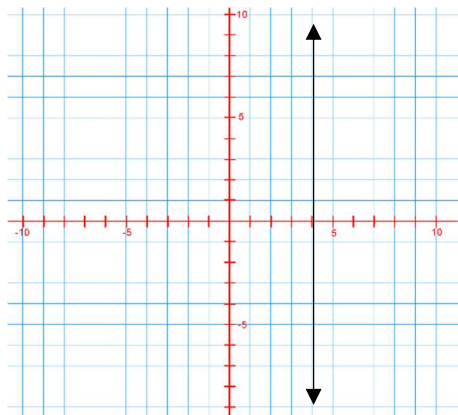
20. $y = 5$

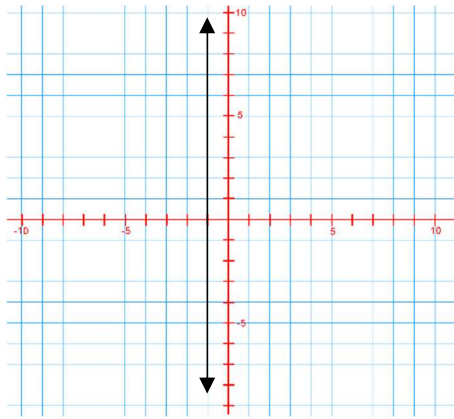


21. $y = -2$



22. $x = 4$





23. $x = -1$

Section 3.3

Change the equation to (a) slope-intercept form, and (b) general form.

1. a. $y = 3x + 4$ b. $3x - y = -4$
2. a. $y = \frac{3}{4}x - 4$ b. $\frac{3}{4}x - y = 4$
3. a. $y = -\frac{1}{2}x - 1$ b. $\frac{1}{2}x + y = -1$
4. a. $y = \frac{2}{3}x - \frac{19}{3}$ b. $2x - 3y = 19$
5. a. $y = -\frac{1}{4}x + \frac{39}{4}$ b. $x + 4y = 39$

Section 3.4

Write an equation for each line.

1. Slope = 4; y-intercept = -6 $y = 4x - 6$
2. Slope = $\frac{1}{4}$; y-intercept = 5 $y = \frac{1}{4}x + 5$
3. Slope = 2; point on line (7, -3) $y + 3 = 2(x - 7)$
4. Slope = $-\frac{2}{3}$; point on line (6, -4) $y + 4 = -\frac{2}{3}(x - 6)$
5. Two points on the line (-4, 6) (2, 1) $y - 6 = -\frac{5}{6}(x + 4)$ or $y - 1 = -\frac{5}{6}(x - 2)$
6. Two points on the line (8, 5) (3, -4) $y - 5 = \frac{9}{5}(x - 8)$ or $y + 4 = \frac{9}{5}(x - 3)$
7. x-intercept (4, 0); y-intercept (0, -5) $y = \frac{5}{4}x - 5$
8. Parallel to $y = 6x - 11$; contains point (-5, 2) $y - 2 = 6(x + 5)$
9. Parallel to $y = \frac{2}{5}x + 6$; contains point (8, 11) $y - 11 = \frac{2}{5}(x - 8)$
10. Perpendicular to $y = 2x - 7$; contains point (-3, 1) $y - 1 = -\frac{1}{2}(x + 3)$
11. Perpendicular to $y = -\frac{4}{3}x - 8$; contains point (-2, 7) $y - 7 = \frac{3}{4}(x + 2)$

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| 12. Horizontal line through point (-9, 14) | $y = 14$ |
| 13. Horizontal line through (4, -8) | $y = -8$ |
| 14. Vertical line through (6, 10) | $x = 6$ |
| 15. Vertical line through (-7, 11) | $x = -7$ |