3.5 Writing Equations of Lines   Name_____

Write the equation in slope-intercept form, $y = mx + b$, of the line with each given slope, m and y-intercept, b.

1. $m = -5$ and $b = 10$	**2.** $m = 3$ and $b = -1$
3. $m = \dfrac{5}{6}$ and $b = -2$	**4.** $m = -\dfrac{1}{4}$ and $b = 5$
5. $m = 0$ and $b = 8$	**6.** $m = 0$ and $b = -6$
7. $m = \dfrac{1}{7}$ and $b = 0$	**8.** $m = -\dfrac{3}{4}$ and $b = 0$

Write the equation in slope-intercept form, $y = mx + b$, of the line that has the given slope, m and passes through the given point.

9. slope is -3 and passes through the point $(5, 6)$	**10.** slope is 4 and passes through the point $(-1, 2)$

Answers: **1.** $y = -5x + 10$; **3.** $y = \dfrac{5}{6}x - 2$; **5.** $y = 8$; **7.** $y = \dfrac{1}{7}x$; **9.** $y = -3x + 21$

Write the equation in slope-intercept form, $y = mx + b$, of the line that has the given slope, m and passes through the given point.

11. slope is $\dfrac{1}{2}$ and passes through the point (4, –5)	**12.** slope is $\dfrac{1}{3}$ and passes through the point (–9, 1)
13. slope is 0 and passes through the point (2, 7)	**14.** slope is 0 and passes through the point (3, –8)
15. slope is $-\dfrac{2}{5}$ and passes through the point (0, 0)	**16.** slope is $\dfrac{4}{3}$ and passes through the point (0, 0)

Answers: **11**. $y = \dfrac{1}{2}x - 7$; **13.** $y = 7$; **15**. $y = -\dfrac{2}{5}x$

Write the equation in slope-intercept form, $y = mx + b$, of the line that has the following characteristics

17. passes through the points

$(-3, 1)$ and $(6, 4)$

18. passes through the points

$(-1, 3)$ and $(2, -3)$

19. passes through the points

$(1, 3)$ and $(3, 7)$

20. passes through the points

$(2, 4)$ and $(1, 6)$

Answers: **17.** $y = \dfrac{1}{3}x + 2$; **19.** $y = 2x + 1$

Write the equation in slope-intercept form, $y = mx + b$, of the line that has the following characteristics

21. passes through the points

$$(1, 7) \text{ and } (3, 7)$$

22. passes through the points

$$(2, 4) \text{ and } (1, 4)$$

23. passes through the points

$$(3, 2) \text{ and } (6, 4)$$

24. passes through the points

$$(-2, 4) \text{ and } (1, -2)$$

Answers: **21.** $y = 7$; **23.** $y = \dfrac{2}{3}x$

Write the equation of the line in slope-intercept form, $y = mx + b$ that has the following characteristics:

25. passes through (2, 4) and is parallel to $y = \dfrac{1}{2}x - 1$.	**26.** passes through (2, 3) and is parallel to $y = 3x - 9$.
27. passes through (1, 2) and is perpendicular to $y = \dfrac{1}{2}x - 1$.	**28.** passes through (3, –2) and is perpendicular to $y = 3x - 9$.

Answers: **25.** $y = \dfrac{1}{2}x + 3$; **27.** $y = -2x + 4$