

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. $m = \frac{5}{6}$ and $b = -2$	4. $m = -\frac{1}{4}$ and $b = 5$
5. $m = 0$ and $b = 8$	6. $m = 0$ and $b = -6$
7. $m = \frac{1}{7}$ and $b = 0$	8. $m = -\frac{3}{4}$ 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. $y = \frac{5}{6}x - 2$; 5. $y = 8$; 7. $y = \frac{1}{7}x$; 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 $\frac{1}{2}$ and passes through the point $(4, -5)$

12. slope is $\frac{1}{3}$ 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 $-\frac{2}{5}$ and passes through the point $(0, 0)$

16. slope is $\frac{4}{3}$ and passes through the point $(0, 0)$

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

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.** $y = \frac{1}{3}x + 2$; **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) and (3, 7)

22. passes through the points

(2, 4) and (1, 4)

23. passes through the points

(3, 2) and (6, 4)

24. passes through the points

(-2, 4) and (1, -2)

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

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

26. passes through (2, 3) and is parallel to $y = 3x - 9$.

27. passes through (1, 2) and is perpendicular to $y = \frac{1}{2}x - 1$.

28. passes through (3, -2) and is perpendicular to $y = 3x - 9$.

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