Name _____ Per. _____ Date _____

Slope-Intercept Review

Name the slope and y-intercept of the following equations. Be sure to use proper variable notation.

1. $y = -4x + 6$

$m = -4$

$b = 6$

2. $y = \frac{2}{7}x - 3$

$m = \frac{2}{7}$

$b = -3$

3. $y = \frac{4}{5}x - \frac{5}{4}$

$m = \frac{4}{5}$

$b = \frac{-5}{4}$

Write the slope-intercept equation of the line with the given slope and y-intercept.

4. slope: 3, y-intercept: -1

$y = 3x - 1$

5. $m = \frac{1}{6}$, $b = 5$

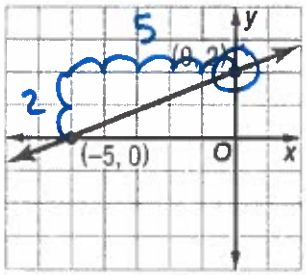
$y = \frac{1}{6}x + 5$

6. $b = \frac{2}{3}$, $m = 2$

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

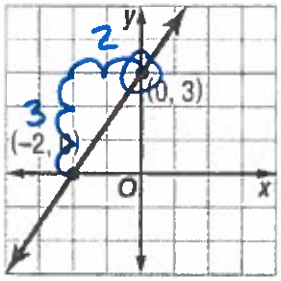
Write the slope-intercept form equation for the line shown on the given graph.

7.



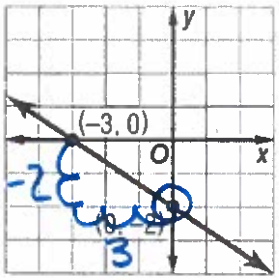
$y = \frac{2}{5}x + 2$

8.



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

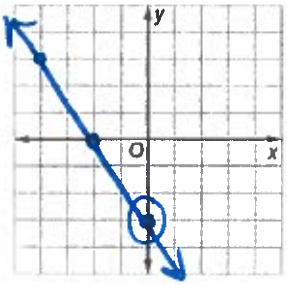
9.



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

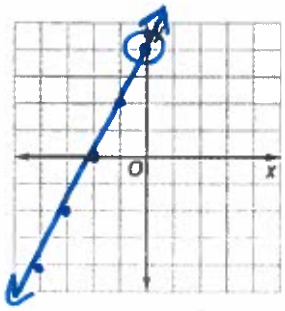
Graph each of the following slope-intercept form equations.

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



11. $y = \frac{1}{4}x$

12. $y = 2x + 4$



Rewrite each of the following equations in slope-intercept form.

13. $\frac{3}{8}x + y = 4$

$-\frac{3}{8}x \quad -\frac{3}{8}x$

$y = -\frac{3}{8}x + 4$

14. $-6y = -5x + 36$

$\frac{-6y}{-6} = \frac{-5x}{-6} + \frac{36}{-6}$

$y = \frac{5}{6}x - 6$

15. $9y + 4x = 27$

$-4x \quad -4x$

$\frac{9y}{9} = \frac{-4x}{9} + \frac{27}{9}$

$y = \frac{-4}{9}x + 3$

Write the slope-intercept form equation which passes through the given point(s).

16. (3, -3), slope 3

$y = mx + b$

$-3 = 3(3) + b$

$-3 = 9 + b$

$-12 = b$

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

17. (1, 5), slope -1

$y = mx + b$

$5 = -1(1) + b$

$5 = -1 + b$

$6 = b$

$\boxed{y = -x + 6}$

18. (-7, -3), (-3, 5)

$m = \frac{5 - -3}{-3 - -7} = \frac{8}{4} = 2$

$y = mx + b$

$5 = 2(-3) + b$

$5 = -6 + b \rightarrow b = 11$

$\boxed{y = 2x + 11}$

Determine if the given lines are parallel, perpendicular, or neither. Show your work when rewriting any equations in slope-intercept form.

19. $y = -2x + 4$, $4y = 2x + 4$

$\frac{4y}{4} = \frac{2x}{4} + \frac{4}{4}$

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

perpendicular

20. $y = \frac{1}{3}x$, $-3y = -9x + 2$

$\frac{-3y}{-3} = \frac{-9x}{-3} + \frac{2}{-3}$

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

neither

Write the slope-intercept equation which passes through the given point and has the given relationship to the named line.

21. (2, 6), *perpendicular* to $y = -\frac{1}{4}x + 3$

$m = 4$

$6 = 4(2) + b$

$6 = 8 + b$

$-2 = b$

$\boxed{y = 4x - 2}$

22. (0, 2), *parallel* to $y = -5x + 8$

slope $= -5$

$2 = -5(0) + b$

$b = 2$

$\boxed{y = -5x + 2}$

23. In 2005, a camp had 450 campers. Five years later, the number of campers rose to 750. Write a linear equation that represents the number of campers that attend camp.

$(\overset{0}{2005}, 450)$ $(\overset{5}{2010}, 750)$

$m = \frac{750 - 450}{2010 - 2005} = \frac{300}{5} = 60$

$(0 - 5)$

$\boxed{y = 60x + 450}$

24. At a local ski resort, lift tickets cost \$15 for the whole day and ski rental costs a \$5 per hour. Write an equation in slope-intercept form for the total cost of skiing for x hours.

15 → initial cost

5 → rate of change

$\boxed{y = 5x + 15}$