

Academic Keystone Geometry
3.4-3.5 Practice WS

Name Key
Period _____ Date _____

Find the slope of the line that passes through the given points.

1. $(2,3), (8,9)$
 x_1, y_1, x_2, y_2
 $m = \frac{9-3}{8-2} = \frac{6}{6} = 1$
 $m = 1$

2. $(-4,5), (0,-4)$
 x_1, y_1, x_2, y_2
 $m = \frac{-4-5}{0-(-4)} = \frac{-9}{4}$
 $m = \frac{-9}{4}$

Line p contains the points $(2,5)$ and $(8,9)$.
 x_1, y_1, x_2, y_2

3. Write the equation of Line p in slope intercept-form

$m = \frac{9-5}{8-2} = \frac{4}{6} = \frac{2}{3}$ $m = \frac{2}{3}$
 $y - 5 = \frac{2}{3}(x - 2)$
 $y - 5 = \frac{2}{3}x - \frac{4}{3}$
 $+5$ $+5$
 $y = \frac{2}{3}x + \frac{11}{3}$

4. Which equation represents a line perpendicular to line p ?

A. $y = -2x + 11$

B. $y = -\frac{3}{2}x + 1$

C. $y = \frac{2}{3}x + \frac{5}{2}$

D. $y = 2x + 31$

5. Which equation represents a line parallel to line p ?

A. $y = -2x + 11$

B. $y = -\frac{3}{2}x + 1$

C. $y = \frac{2}{3}x + \frac{5}{2}$

D. $y = 2x + 31$

Write the equation of the line in slope-intercept form.

6. Through $(2,6)$; $m = -\frac{1}{3}$

$y - 6 = -\frac{1}{3}(x - 2)$
 $y - 6 = -\frac{1}{3}x + \frac{2}{3}$
 $+6$ $+6$
 $y = -\frac{1}{3}x + \frac{20}{3}$

Write the equation in *standard form*.

7. Through $(-4, -4)$; $m = \frac{1}{2}$

$$y + 4 = \frac{1}{2}(x + 4)$$

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

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

$$-\frac{1}{2}x \quad -\frac{1}{2}x$$

$$2 \cdot \left(-\frac{1}{2}x + y\right) = -2 \cdot 2$$

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

8. $m = \frac{10}{3}$; $b = -\frac{2}{5}$

$$15 \cdot y = \left(\frac{10}{3}x - \frac{2}{5}\right) \cdot 15$$

$$15y = 50x - 6$$

$$-50x \quad -50x$$

$$\boxed{-50x + 15y = -6}$$

9. Write an equation *parallel* to $y = \frac{2}{3}x + 12$ and through the point $(-6, 2)$.

$$m = \frac{2}{3}$$

$$m_{11} = \frac{2}{3}$$

$$(-6, 2)$$

$$x_1 \quad y_1$$

$$y - 2 = \frac{2}{3}(x + 6)$$

$$y - 2 = \frac{2}{3}x + 4$$

$$+2 \quad +2$$

$$\boxed{y = \frac{2}{3}x + 6}$$

10. Write an equation *perpendicular* to $2x + 5y = 20$ and through $(4, -3)$.

$$2x + 5y = 20$$

$$-2x \quad -2x$$

$$\frac{5y}{5} = \frac{-2x + 20}{5}$$

$$y = -\frac{2}{5}x + 4$$

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

$$m_{\perp} = \frac{5}{2}$$

$$(4, -3)$$

$$x_1 \quad y_1$$

$$y + 3 = \frac{5}{2}(x - 4)$$

$$y + 3 = \frac{5}{2}x - 10$$

$$-3 \quad -3$$

$$\boxed{y = \frac{5}{2}x - 13}$$

11. In 2000 the Miller family bought a house for \$185,000. In 2010 the home was reassessed at \$195,000. What is average rate of change in dollars per year from 2000 to 2010? What could they expect the next assessment value to be in 2015?

$$\frac{\text{dollars}}{\text{year}} = \frac{195,000 - 185,000}{2010 - 2000} = \frac{10,000}{10} = \boxed{\$1,000 \text{ per year}}$$

$$2015: 195,000 + 5(1,000) = \boxed{\$200,000}$$