

# Quiz Review – Section 3.6 & 3.7

Name:

Hour:

*Key*

Page 171: #64, 66-69

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64. Which equation is equivalent to  $15x + 3y = 10$ ?

- A.  $y = 5x + \frac{10}{3}$     B.  $y = -5x - \frac{10}{3}$     C.  $y = 5x - \frac{10}{3}$     **D.  $y = -5x + \frac{10}{3}$**

*D*

66. What is the y-intercept of the line whose equation is  $y + 9 = 2(x - 3)$ ?

- A. 15    B. 9    **C. -15**    D. -9

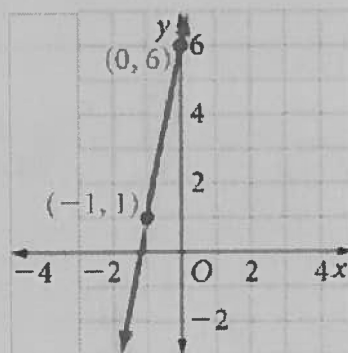
*C*

Use the graph at the right for Exercises 67-68.

67. What is the slope of the line?

- F. -5    G.  $-\frac{1}{5}$     **H.  $\frac{1}{5}$**     **I. 5**

*J*



68. Which equation is the equation for the line?

- A.  $5y = x - 6$     B.  $y = 5x - 6$     **C.  $-5x + y = 6$**     D.  $x + 5y = 6$

*C*

69. The slope of line  $a$  is  $\frac{3}{2}$  and its y-intercept is 12. Line  $b$  passes through  $(4, 1)$  and  $(7, -3)$ .

a. Write an equation for each line.

b. Graph both lines on the same coordinate plane. From the graph, what is their point of intersection?

**a.**  $y = \frac{3}{2}x + 12$      $y - 1 = \frac{-3 - 1}{7 - 4}(x - 4)$      $\frac{-3 - 1}{7 - 4} = \frac{-4}{3}$     **or**  $y + 3 = \frac{-4}{3}(x - 7)$

**b.**  $(-2, 9)$  See graph

Write an equation for the line parallel to  $\overleftrightarrow{AB}$  that contains point C.

14.  $\overleftrightarrow{AB}: -x + 2y = 4, C(-2, 4)$

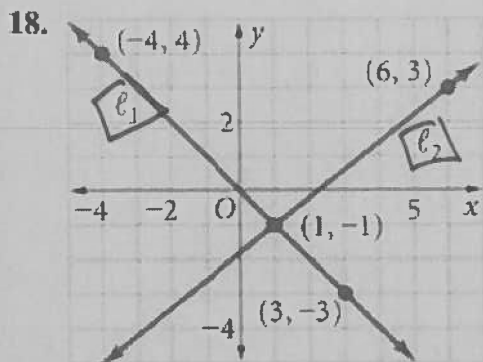
$\frac{2y}{2} = \frac{x}{2} + \frac{4}{2}$

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

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

**or**  $y = \frac{1}{2}x + 5$

Are lines  $\ell_1$  and  $\ell_2$  perpendicular? Explain using slope.



$$l_1: \text{slope} = -1$$

$$l_2: \text{slope} = \frac{4}{5}$$

Not perp.

Not opposite reciprocals

Write an equation for the line through  $P$  and perpendicular to the given line.

20.  $P(6, 6); y = \frac{2}{3}x$   $-\frac{3}{2}$

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

22.  $P(4, 4); y + 2x = -8$

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

49. What is the slope of a line parallel to the line  $6x - 4y = 12$ ?

- B A.  $-\frac{3}{2}$  B.  $\frac{3}{2}$  C.  $\frac{4}{3}$  D.  $-\frac{4}{3}$

50. The slope of a line is 6. What is the slope of a line perpendicular to it?

- J F. 6 G. -6 H.  $\frac{1}{6}$  J.  $-\frac{1}{6}$

51. Line  $f$  contains the points  $(5, -4)$  and  $(4, -6)$ . What is the slope of a line perpendicular to it?

- C A. 2 B.  $\frac{1}{2}$  C.  $-\frac{1}{2}$  D. -2

52. Line  $c$  contains the points  $(2, -2)$  and  $(-4, 1)$ .

a. What is the slope of a line perpendicular to line  $c$ ?

b. What is the  $y$ -intercept of the line perpendicular to line  $c$  that contains  $(1, 2)$ ?

$$\frac{1 + 2}{-4 - 2} = \frac{3}{-6} = -\frac{1}{2}$$

a slope = 2

b y-int @ 0

b

$$y - 2 = 2(x - 1)$$

$$y - 2 = 2x - 2$$

$$+2 \quad +2$$

$$y = 2x + 0$$

Algebra Write an equation for the line containing the given points.

53.  $A(0, 3), B(6, 0)$

54.  $C(-4, 2), D(-1, 7)$

55.  $E(3, -2), F(-5, -8)$

$$y - 3 = -\frac{1}{2}(x - 0)$$

OR

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

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

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

Algebra Graph each line using intercepts. (See graph)

4.  $4x + y = -8$

5.  $-2x + 3y = 12$

6.  $3x + 5y = 30$

X int  $(-2, 0)$

X int:  $(-6, 0)$

X int:  $(10, 0)$

Y int  $(0, -8)$

Y int:  $(0, 4)$

Y int:  $(0, 6)$

Find the slopes of  $\overrightarrow{RS}$  and  $\overrightarrow{TV}$ . Then determine whether  $\overrightarrow{RS}$  and  $\overrightarrow{TV}$  are parallel, perpendicular, or neither. Explain.

7.  $R(-2, 6), S(3, 4), T(3, 5), V(0, 0)$

8.  $R(6, -1), S(7, 0), T(3, -4), V(0, -1)$

Slope  $\overrightarrow{RS}$ :  $-\frac{2}{5}$

Slope  $\overrightarrow{RS}$ : 1

perpendicular;  
opposite  
reciprocals

Slope  $\overrightarrow{TV}$ :  $\frac{5}{3}$

Slope  $\overrightarrow{TV}$ : -1

Neither  
not the same  
or opposite recip.

9.  $R(9, 1), S(5, 6), T(3, 8), V(-2, 4)$

10.  $R(5, -7), S(-4, -9), T(6, 2), V(-3, 0)$

Slope  $\overrightarrow{RS}$ :  $-\frac{5}{4}$

perp.  $\perp$ ;

$\overrightarrow{RS}$  slope =  $\frac{2}{9}$

parallel  
(//)

Slope  $\overrightarrow{TV}$ :  $\frac{4}{5}$

opposite  
reciprocals

$\overrightarrow{TV}$  slope =  $\frac{2}{9}$

same slopes

