

G.G.62: Parallel and Perpendicular Lines 1: Find the slope of a perpendicular line, given the equation of a line

- 1 What is the slope of a line perpendicular to the line whose equation is $y = 3x + 4$?
 - 1) $\frac{1}{3}$
 - 2) $-\frac{1}{3}$
 - 3) 3
 - 4) -3
- 2 What is the slope of a line perpendicular to the line whose equation is $y = -\frac{2}{3}x - 5$?
 - 1) $-\frac{3}{2}$
 - 2) $-\frac{2}{3}$
 - 3) $\frac{2}{3}$
 - 4) $\frac{3}{2}$
- 3 What is the slope of a line perpendicular to the line whose equation is $2y = -6x + 8$?
 - 1) -3
 - 2) $\frac{1}{6}$
 - 3) $\frac{1}{3}$
 - 4) -6
- 4 What is the slope of a line perpendicular to the line whose equation is $5x + 3y = 8$?
 - 1) $\frac{5}{3}$
 - 2) $\frac{3}{5}$
 - 3) $-\frac{3}{5}$
 - 4) $-\frac{5}{3}$
- 5 What is the slope of a line that is perpendicular to the line whose equation is $3x + 5y = 4$?
 - 1) $-\frac{3}{5}$
 - 2) $\frac{3}{5}$
 - 3) $-\frac{5}{3}$
 - 4) $\frac{5}{3}$
- 6 What is the slope of a line that is perpendicular to the line whose equation is $3x + 4y = 12$?
 - 1) $\frac{3}{4}$
 - 2) $-\frac{3}{4}$
 - 3) $\frac{4}{3}$
 - 4) $-\frac{4}{3}$

- 7 What is the slope of a line that is perpendicular to the line represented by the equation $x + 2y = 3$?
- 2
 - 2
 - $-\frac{1}{2}$
 - $\frac{1}{2}$
- 8 What is the slope of the line perpendicular to the line represented by the equation $2x + 4y = 12$?
- 2
 - 2
 - $-\frac{1}{2}$
 - $\frac{1}{2}$
- 9 What is the slope of a line perpendicular to the line whose equation is $20x - 2y = 6$?
- 10
 - $-\frac{1}{10}$
 - 10
 - $\frac{1}{10}$
- 10 What is the slope of a line perpendicular to the line whose equation is $3x - 7y + 14 = 0$?
- $\frac{3}{7}$
 - $-\frac{7}{3}$
 - 3
 - $-\frac{1}{3}$
- 11 The equation of a line is $3y + 2x = 12$. What is the slope of the line perpendicular to the given line?
- $\frac{2}{3}$
 - $\frac{3}{2}$
 - $-\frac{2}{3}$
 - $-\frac{3}{2}$
- 12 The slope of line ℓ is $-\frac{1}{3}$. What is an equation of a line that is perpendicular to line ℓ ?
- $y + 2 = \frac{1}{3}x$
 - $-2x + 6 = 6y$
 - $9x - 3y = 27$
 - $3x + y = 0$
- 13 Find the slope of a line perpendicular to the line whose equation is $2y - 6x = 4$.
- 14 The slope of \overline{QR} is $\frac{x-1}{4}$ and the slope of \overline{ST} is $\frac{8}{3}$. If $\overline{QR} \perp \overline{ST}$, determine and state the value of x .

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Answer Section

1 ANS: 2 REF: 061022ge

2 ANS: 4 REF: 080917ge

3 ANS: 3

$2y = -6x + 8$ Perpendicular lines have slope the opposite and reciprocal of each other.

$$y = -3x + 4$$

$$m = -3$$

$$m_{\perp} = \frac{1}{3}$$

REF: 081024ge

4 ANS: 2 REF: fall0828ge

5 ANS: 4

The slope of $3x + 5y = 4$ is $m = \frac{-A}{B} = \frac{-3}{5}$. $m_{\perp} = \frac{5}{3}$.

REF: 061127ge

6 ANS: 3 REF: 011025ge

7 ANS: 2

The slope of $x + 2y = 3$ is $m = \frac{-A}{B} = \frac{-1}{2}$. $m_{\perp} = 2$.

REF: 081122ge

8 ANS: 2

The slope of $2x + 4y = 12$ is $m = \frac{-A}{B} = \frac{-2}{4} = -\frac{1}{2}$. $m_{\perp} = 2$.

REF: 011310ge

9 ANS: 2

$$m = \frac{-A}{B} = \frac{-20}{-2} = 10. \quad m_{\perp} = -\frac{1}{10}$$

REF: 061219ge

10 ANS: 2

$$m = \frac{-A}{B} = \frac{-3}{-7} = \frac{3}{7} \quad m_{\perp} = -\frac{7}{3}$$

REF: 081414ge

11 ANS: 2

$$m = \frac{-A}{B} = \frac{-2}{3} \quad m_{\perp} = \frac{3}{2}$$

REF: 061417ge

12 ANS: 3

The slope of $9x - 3y = 27$ is $m = \frac{-A}{B} = \frac{-9}{-3} = 3$, which is the opposite reciprocal of $-\frac{1}{3}$.

REF: 081225ge

13 ANS:

$$m = \frac{-A}{B} = \frac{6}{2} = 3. \quad m_{\perp} = -\frac{1}{3}.$$

REF: 011134ge

14 ANS:

$$\frac{x-1}{4} = \frac{-3}{8}$$

$$8x - 8 = -12$$

$$8x = -4$$

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

REF: 011534ge