

1. What is the value of the expression

$$\frac{5(-18 + 12)}{-4 + 1}?$$

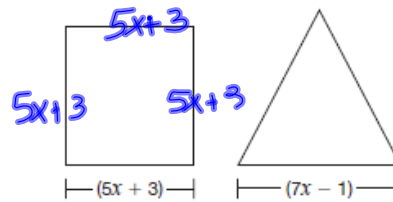
a 10
 b 6
 c -6
 d -10

$$\frac{-30}{-3} = 10$$

2. Which of the following cannot be an equation of a line?

- a $x = 2$
 b $y = 7$
 c $y = 2x^2 + 7$
 d $2x + y + 7 = 0$

3. A square and an equilateral triangle are pictured below.



If the square and the triangle have the same perimeter, what is the value of x ?

- a 2
 b 4
 c 9
 d 15

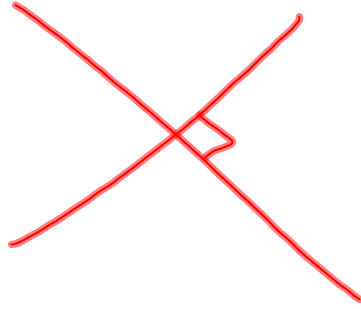
$$20x + 12 = 21x - 3$$

$$15 = x$$

Learning Goals

- To understand that parallel lines have slopes that are the same, different y -intercepts.
- To understand that perpendicular lines have slopes that are negative reciprocals, different y -intercepts.

Perpendicular lines have the property that their **slopes are negative reciprocals** of one another. A reciprocal of a fraction is obtained by switching the numerator and denominator.



Example Two

Determine the negative reciprocal of the following:

a) $\frac{3}{2}$ $-\frac{2}{3}$

b) $\frac{-9}{2}$ $\frac{2}{9}$

c) -4 $\frac{1}{4}$

d) $\frac{1}{5}$ $-\frac{5}{1}$

Example Three

Determine the equation of a line perpendicular to $y = \frac{3}{2}x + 7$ that has a y-intercept of 6.

$$1. \quad y = mx + b$$

$$2. \quad m = -\frac{2}{3}$$

$$b = 6$$

$$3. \quad y = -\frac{2}{3}x + 6$$

Example Four

Determine the equation of a line that passes through the point $(-3, 6)$ and is parallel to the line $y = -6x + 2$.

1. Solve for slope (m).

$$m = -6 \text{ (given)}$$

2. Solve for y-intercept (b)

$$y = mx + b$$

$$6 = -6(-3) + b$$

$$6 = 18 + b$$

$$b = -12$$

3. State eqn by plugging in " m " + " b ".

$$y = -6x - 12$$

Complete: p. 302 - 304 #2, 3, 8 - 10, 15a.

#2	Parallel	Perpendicular
	a, f, g	c, h b, e