

Unlock Algebra I Readiness Test

- 1)** Add and subtract the integers

$$-5 + (-8) - (-6) = ?$$

- 2)** Multiply the integers

$$(-3)(6)(-2) = ?$$

- 3)** Evaluate the expression for $x = 7$

$$(x - 4)^2 + 3 \cdot 8 = ?$$

- 4)** Simplify by collecting like terms

$$5x + 2y - 7 + 7x - 6 - 8y = ?$$

- 5)** Use the distributive property to simplify the expression

$$-3(7x + y - 9) = ?$$

- 6)** Add the fractions

$$\frac{1}{3} + \frac{2}{5} = ?$$

- 7)** A recipe for two dozen cookies calls for $2\frac{1}{4}$ cups of flour. If you only want to make half as many cookies as this, how much flour would you need to use?

- 8)** A cake recipe calls for $1\frac{1}{2}$ cups of sugar. Suppose you only have one size of measuring cup, a quarter cup. How many quarter cups of sugar would you need?

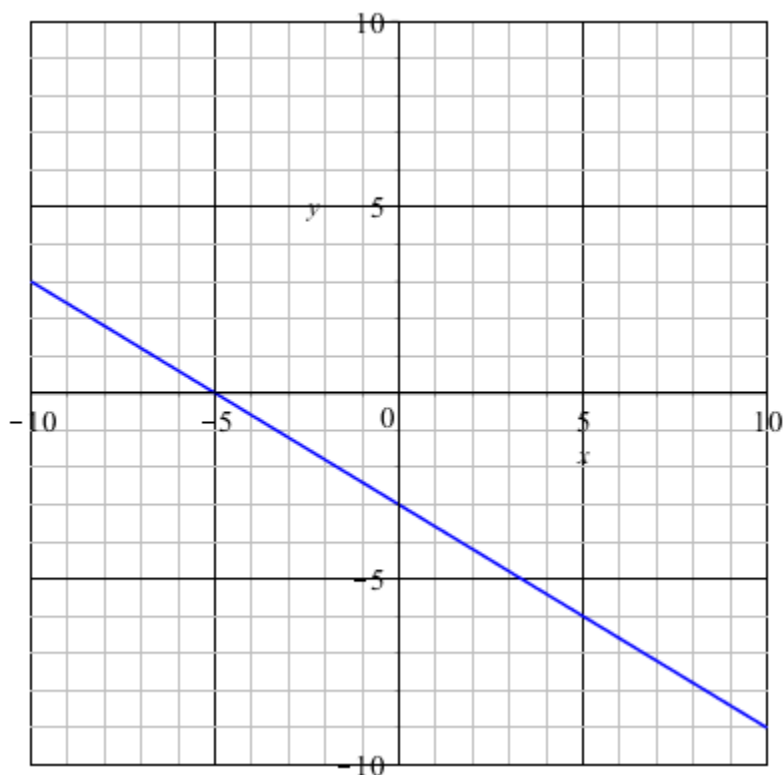
- 9)** Ben and Reid have summer jobs cutting lawns. Each month, Ben charges his customers a standard fee of \$40 plus \$6 each time he cuts their lawn. Reid simply charges his customers \$10 each time their lawn gets cut. Suppose that they each have a customer whose lawn gets cut the same number of times, and they earn the same amount of money from. Solve this equation to find out how many times these customers' lawns were cut.

$$6x + 40 = 10x$$

10) Solve the equation for x

$$\frac{2}{5}x - 2 = \frac{8}{5}x + 10$$

11) Write the equation of the line graphed below in slope/y-intercept form



12) Sketch the graph of the line with the following equation:

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

13) Write the linear equation below in slope/y-intercept form.

$$3x + 5y = 20$$

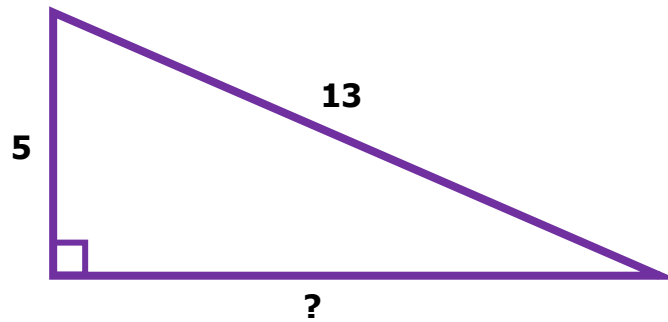
14) A new pair of shoes cost \$70, plus 15% tax. How much is the tax on these shoes worth?

15) Julian leaves on a trip with 30 gallons of gas in his truck. When he arrives, he only has 12 gallons left. What was the percent change of his gas?

16) Factor the binomial expression:

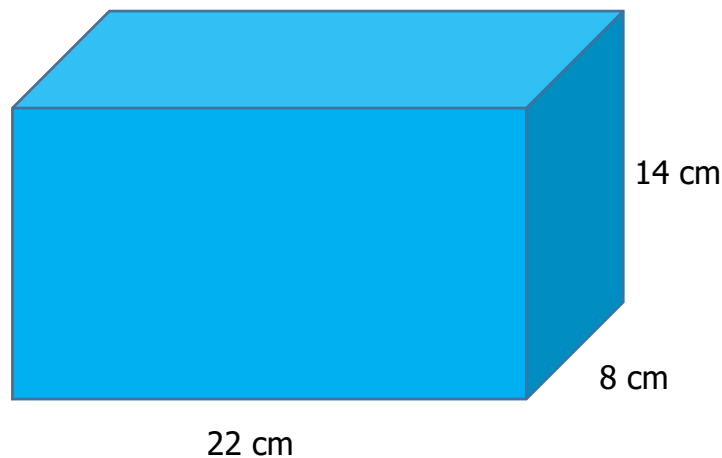
$$8x^2 + 36x$$

17) Find the missing side length of the triangle below (image not to scale)



18) Find the circumference of a circle that has a diameter of 8 inches (rounded to 2 decimal places).

19) Find the total surface area of the rectangular prism



20) Calculate the volume of a cone with a radius of 4 inches and a height of 11 inches, rounded to 2 decimal places.

Unlock Algebra I Readiness Test Answer Key

1) -7

2) 36

3) 33

4) $12x - 6y - 13$

5) $-21x - 3y + 27$

6) $\frac{11}{15}$

7) $1\frac{1}{8}$ or $\frac{9}{8}$

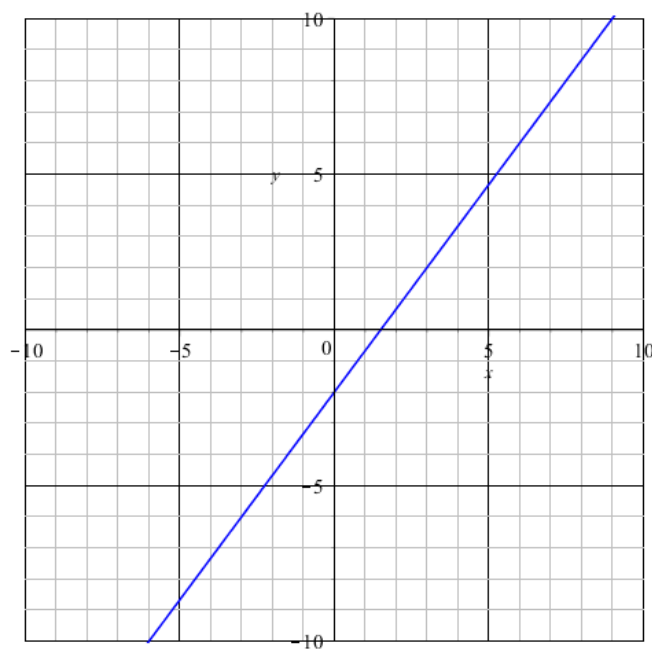
8) 6

9) 10

10) -10

11) $y = -\frac{3}{5}x - 3$

12)



13) Write the linear equation below in slope/y-intercept form.

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

14) \$10.50

15) -60% (or a decrease of 60%)

16) $4x(2x + 9)$

17) 12

18) 25.12 inches

19) 1192 cm²

20) 184.21 in³

Students with 16 or more questions correct are ready for UnLock Algebra I.