

Solving Equations by Multiplying or Dividing

Inverse Operations	
Operation	Inverse Operation
Multiplication	division
Division	multiplication

Solve each equation.

1.) $\frac{3x}{3} = \frac{9}{3}$

$x = 3$

2.) $\frac{-64}{8} = \frac{8x}{8}$

$x = -8$

3.) $\frac{-4x}{-4} = \frac{-28}{-4}$

$x = 7$

4.) $2 \cdot \frac{x}{2} = 9 \cdot 2$

$x = 18$

5.) $5 \cdot -40 = \frac{x}{5} \cdot 5$

$-200 = x$

6.) $\frac{1}{3}x = 4 \cdot 3$

$x = 12$

7.) $\frac{2}{3}x = 10 \cdot \frac{3}{2}$

$x = 15$

8.) $\frac{4}{3} \cdot 9 = \frac{3}{4}d$

$-12 = d$

9.) $-\frac{4}{5}d = \frac{2}{3} \cdot \frac{-5}{4}$

$d = \frac{-10}{12} = \frac{-5}{6}$

10.) Charlie puts $\frac{1}{4}$ of the money he earns from mowing lawns into a college education fund. This year, Charlie added \$285 to his college education fund. Write and solve an equation to find how much money Charlie earned mowing lawns this year.

$$\frac{1}{4}x = 285$$

$$x = 1140$$

\$1140

11.) The distance in miles from the airport that a plane should begin descending, divided by 3, equals the plane's height above the ground in thousands of feet. A plane began descending 45 miles from the airport. Use the equation to find how high the plane was flying when the descent began.

$$\frac{45}{3} = 15$$

15,000 feet

Write an equation to represent each relationship. Then, solve the equation.

12.) Three times a number is 15.

$$3x = 15$$

$$x = 5$$

13.) A number multiplied by -3 is 18.

$$-3x = 18$$

$$x = -6$$

14.) The quotient of a number and 4 equals 6.

$$\frac{n}{4} = 6$$

$$n = 24$$