

## Math 9

## Solving Single Step Equations

Fill in the box to make the statement true.

a)  $4 \times \underline{6} = 24$

b)  $5 \times \underline{12} = 60$

c)  $\underline{700} \div 10 = 70$

d)  $30 \div \underline{6} = 5$

e)  $\frac{\underline{63}}{3} = 21$

f)  $\frac{18}{\underline{3}} = 6$

### Steps to solving one-step equations:

- Do the **opposite** operation to **both** sides of the equation to isolate **x**.
- Check your answer.

Ex. Solve and check. Show your work!

$$x - 4 = 5$$

~~+4~~      ~~+4~~

$$\boxed{x = 9}$$

(think about the **opposite**)

check:  $x - 4 = 5$   
 $9 - 4 = 5$  ✓

Ex: Solve and check. Show your work!

a)  $x - 7 = 12$

~~+7~~      ~~+7~~

$$\boxed{x = 19}$$

check:  $19 - 7 = 12$  ✓

b)  $a + 3 = 14$

~~-3~~      ~~-3~~

$$\boxed{a = 11}$$

check:  $11 + 3 = 14$  ✓

c)  $5 = y + 8$

~~-8~~      ~~-8~~

$$\boxed{-3 = y}$$

check:  $5 = -3 + 8$  ✓

**Questions:** Solve. Show your work!

$$1) m - \cancel{9} = -7$$

*+9   +9*

$$\boxed{m = 2}$$

$$2) x - \cancel{6} = -15$$

*+6   +6*

$$\boxed{x = -9}$$

$$3) a + \cancel{8} = 4$$

*-8   -8*

$$\boxed{a = -4}$$

$$4) -7 = x - \cancel{4}$$

*+4   +4*

$$\boxed{-3 = x}$$

$$5) \cancel{2} + m = -9$$

*-2   -2*

$$\boxed{m = -11}$$

$$6) -9 = y - \cancel{1}$$

*+1   +1*

$$\boxed{-8 = y}$$

**Ex.** Solve and check. (Think about the **opposite**)

$$a) \cancel{2}x = \cancel{10}$$

*2   2*

*\* divide*

$$\boxed{x = 5}$$

$$b) \cancel{5}y = -3 \cdot \cancel{5}$$

*5   5*

*\* multiply*

$$\boxed{y = -15}$$

$$2(5) = 10$$

✓

$$\frac{-15}{5} = -3$$

✓

**Example:** Solve and check. Show your work!

$$a) \cancel{10}x = \cancel{110}$$

*10   10*

$$\boxed{x = 11}$$

$$\text{check: } 10(11) = 110$$

✓

$$b) \cancel{6}m = \cancel{-42}$$

*6   6*

$$\boxed{m = -7}$$

$$\text{check: } 6(-7) = -42$$

✓

$$c) \cancel{4}q = 7(\cancel{4})$$

*4   4*

$$\boxed{q = 28}$$

$$\text{check: } \frac{28}{4} = 7$$

✓

**Questions:** Solve. Show your work!

$$1) \frac{-5x}{-5} = \frac{-40}{-5}$$

$$x = 8$$

$$2) \frac{45}{-9} = \frac{-9x}{-9}$$

$$-5 = x$$

$$3) \frac{1.5x}{1.5} = \frac{4.5}{1.5}$$

$$x = 3$$

$$4) \frac{-12j}{-12} = -3(-12)$$

$$j = 36$$

$$5) \frac{(12)5}{12} = \frac{x(12)}{12}$$

$$60 = x$$

$$6) \frac{(0.2)x}{0.2} = -2.1(0.2)$$

$$x = -0.42$$

**Example:** Solve.

$$a) \frac{2x}{2} = \frac{3}{4} \div \frac{2}{1}$$

$$x = \frac{3}{4} \times \frac{1}{2}$$

$$x = \frac{3}{8}$$

$$b) \frac{2x}{2} = \frac{5}{6} \times 2$$

$$x = \frac{5}{6} \times \frac{2}{1}$$

$$x = \frac{10}{6}$$

$$x = \frac{5}{3}$$

$$c) \frac{15}{x} = 5(x)$$

$$\frac{15}{5} = \frac{5x}{5}$$

$$3 = x$$

**Questions:** Solve. Show your work!

$$1) \frac{3x}{3} = \frac{2}{4} \div \frac{3}{1}$$

$$x = \frac{2}{4} \times \frac{1}{3}$$

$$x = \frac{2}{12}$$

$$x = \frac{1}{6}$$

$$2) \frac{y}{5} = \left(\frac{-2}{3}\right) \frac{5}{1}$$

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

$$3) \frac{45x}{x} = -9x$$

$$\frac{45}{-9} = \frac{-9x}{-9}$$

$$-5 = x$$