Name:_____

Solving two-step equations

Solve the equation and check.

Example: $5n - 3 = 12$

Step 1: Isolate the variable term 5n by adding 3 to both sides.

$$5n - 3 + 3 = 12 + 3$$

$$5n = 15$$

Step 2: Isolate the variable n by dividing by 5 on both sides.

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

$$\boxed{n = 3}$$

Step 3: Check.

$$5n - 3 = 12$$

$$5(3) - 3 = 12$$

$$15 - 3 = 12$$

$$12 = 12 \checkmark$$

Practice: $3x - 5 = 16$

Step 1: Isolate the variable term $3x$ by adding ____ to both sides.

$$3x - 5 \qquad = 16$$

$$3x =$$

Step 2: Isolate the variable x by dividing by ____ on both sides.

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

$$x =$$

Step 3: Check.

$$3x - 5 = 16$$

$$3(\quad) - 5 = 16$$

$$-5 = 16$$

$$= 16 \checkmark$$

Example: $-6 = 8 + 7m$

Step 1: Isolate the variable term $7m$ by subtracting 8 from both sides.

$$-6 - 8 = 8 - 8 + 7m$$

$$-14 = 7m$$

Step 2: Isolate the variable m by dividing by 7 on both sides.

$$\frac{-14}{7} = \frac{7m}{7}$$

$$\boxed{m = -2}$$

Step 3: Check.

$$-6 = 8 + 7m$$

$$-6 = 8 + 7(-2)$$

$$-6 = 8 - 14$$

$$-6 = -6 \surd$$

Practice: $-3 = 7 + 2y$

Step 1: Isolate the variable term $2y$ by subtracting ____ from both sides.

$$-3 \quad = 7 \quad + 2y$$

$$= 2y$$

Step 2: Isolate the variable y by dividing by ____ on both sides.

$$\frac{\quad}{\quad} = \frac{2y}{\quad}$$

$$y =$$

Step 3: Check.

$$-3 = 7 + 2y$$

$$-3 = 7 + 2(\quad)$$

$$-3 = \quad \surd$$

Example: $\frac{b}{3} - 4 = -6$

Step 1: Isolate the variable term $\frac{b}{3}$ by adding 4 from both sides.

$$\frac{b}{3} - 4 + 4 = -6 + 4$$

$$\frac{b}{3} = -2$$

Step 2: Isolate the variable b by multiplying by 3 on both sides.

$$3 \cdot \frac{b}{3} = -2 \cdot 3$$

$$\boxed{b = -6}$$

Step 3: Check.

$$\frac{b}{3} - 4 = -6$$

$$\frac{-6}{3} - 4 = -6$$

$$-2 - 4 = -6$$

$$-6 = -6 \surd$$

Practice: $-4 + \frac{p}{5} = 11$

Step 1: Isolate the variable term $\frac{p}{5}$ by _____ _____ on both sides.
adding/subtracting

$$-4 \quad + \frac{p}{5} = 11$$

$$\frac{p}{5} =$$

Step 2: Isolate the variable p by _____ by _____ on both sides.
multiplying/dividing

$$\frac{p}{5} =$$

$$p =$$

Step 3: Check.

$$-4 + \frac{p}{5} = 11$$

$$-4 + \frac{\quad}{5} = 11$$

$$= 11 \surd$$