

Chapter 1: Equations

1.1 Solving Simple Equations p.4

What are we always trying to do?

isolate the variable

How? by doing the inverse operation (\times and \div , $+$ and $-$)

We call those **Properties of Equality**

Whatever you do to one side of the equation, you must do to the other in order to stay balanced.

Examples

$$\begin{array}{r} 1.) \quad x + 7 = -6 \\ \quad \quad \quad \cancel{+7} \quad \quad \quad \cancel{+7} \\ \hline \boxed{x = -13} \end{array}$$

check your solution by replacing the variable in the original equation

$$\begin{array}{r} 1 - 7 = -6 \\ -6 = -6 \checkmark \end{array}$$

$$\begin{array}{r} 2.) \quad y + 3.4 = 0.5 \\ \quad \quad \quad \cancel{-3.4} \quad \quad \quad \cancel{-3.4} \\ \hline \boxed{y = -2.9} \end{array}$$

$$\begin{array}{r} -2.9 + 3.4 \\ \hline 0.5 \end{array}$$

check

$$-2.9 + 3.4 = 0.5$$

$$\begin{array}{r} -2.9 + 3.4 \\ \hline 0.5 = 0.5 \checkmark \end{array}$$

$$\begin{array}{r} 3.) \quad h + 2\pi = 3\pi \\ \quad \quad \quad \cancel{-2\pi} \quad \quad \quad \cancel{-2\pi} \\ \hline \boxed{h = \pi} \end{array}$$

* treat π as a variable ~ kinda but it's a #
which in this example is a like term

4) $\left(\frac{4}{3}\right) - \frac{3}{4}n = -2\left(-\frac{4}{3}\right)$ * when the coefficient is a fraction, multiply by the reciprocal; use () for x otherwise it will look like subtraction

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

* leave improper

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

$$x = 3$$

6) $\frac{(4)y}{4} = -7(4)$

$$y = -28$$

7) $\frac{6\pi}{\pi} = \frac{\pi x}{\pi}$

$$6 = x$$

8) $\frac{0.09w}{0.09} = \frac{1.8}{0.09}$

$$w = 20$$

$$.09 \overline{) 1.80.}$$

9) $\frac{r - \pi}{+\pi} = \frac{\pi}{+\pi}$

$$r = 2\pi$$

10) $q + |-10| = 2$

$$q + 10 = 2$$

$$\underline{-10} \quad \underline{-10}$$

$$q = -8$$

11) $p - 8 \div \frac{1}{2} = -3$

$$p - 16 = -3$$

$$\underline{+16} \quad \underline{+16}$$

$$p = 13$$