

*Big Ideas

3 Big Ideas TO SOLVE Equations:

- 1) Isolate the variable
- 2) What you do on one side of the equal sign you do to the other side
- 3) Use inverse operations to solve

Notes 1-1

Solving Simple Equations

Try It Ex. 1: Solve the equation. Check your solution.

1. $b + 2 = -5$ ← put line to separate your 2 sides of work

$$\begin{array}{l|l} b + 2 & = -5 \\ \hline b & = -7 \end{array}$$

2. $-3 = k + 3$

$$\begin{array}{l|l} -3 & = k + 3 \\ \hline -6 & = k \end{array}$$

* variable can be on opposite side of equal sign

3. $t - \frac{1}{4} = -\frac{3}{4}$

$$\begin{array}{l|l} t - \frac{1}{4} & = -\frac{3}{4} \\ \hline t & = -\frac{2}{4} = \boxed{-\frac{1}{2}} \end{array}$$

* always reduce fractions

Try It Ex. 2: Solve the equation. Check your solution.

4. $\frac{y}{4} = -7 \cdot 4$

$$\begin{array}{l|l} \frac{y}{4} & = -7 \cdot 4 \\ \hline y & = -28 \end{array}$$

* Different ways to write multiplication:

$a(b)$ ab $a \times b$ $a \cdot c$

↑ don't use \times any more because it looks like a variable

5. $-\frac{2z}{3} = 6 \cdot -\frac{3}{2}$

$$z = \frac{-18}{2} = \boxed{-9}$$

* Different ways to write division:

$a \div b$ $\frac{a}{b}$ a/b

6. $0.09w = 1.8$

$$\begin{array}{l|l} 0.09w & = 1.8 \\ \hline w & = 20 \end{array}$$

7. $6x = 6x$

6x	6x
6	x

Try It Ex. 3: Solve the equation. Check your solution.

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

p	-8	=	-3
+16			+16
p = 13			

$$\frac{8}{\frac{1}{2}} = 8 \cdot \frac{2}{1} = \frac{16}{1} = 16$$

dividing by a fraction
 "keep it, change it, flip it" or
 multiply by the reciprocal

9. $q + |-10| = 2$

q	+10	=	2
	-10		-10
q = -8			

Try It Ex. 4:

10. The melting point of ice is $\frac{2}{9}$ of the melting point of candle wax. The melting point of ice is 32°F .
What is the melting point of candle wax?

Make sure you answered the question

x = melting point of candle wax

$$\frac{2}{9} \cdot \frac{9}{9} x = 32 \cdot \frac{9}{2}$$

$$x = \frac{288}{2} = \boxed{144^\circ\text{F}}$$

* always label story problems

* For multiple choice equation problems, you could just check each solution, but that is very time consuming. It is faster to just solve the equation.