

Algebra I

3-1

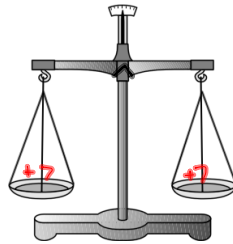
Solving Equations using Addition and Subtraction

Solve - Get the variable on a side by itself.

Solve.

1) $x - 7 = 13$

$$\begin{aligned} x - 7 + 7 &= 13 + 7 \\ x &= 20 \\ \{20\} \end{aligned}$$



$$x - 7 = 13$$

3) $z + 8 = 31$

$$\begin{aligned} z + 8 - 8 &= 31 - 8 \\ z &= 23 \\ \{23\} \end{aligned}$$

13) $-19 + a = 23$

$$\begin{aligned} -19 + 19 + a &= 23 + 19 \\ a &= 42 \\ \{42\} \end{aligned}$$

23) $4.5 = x + 1.6$

$$\begin{aligned} 4.5 - 1.6 &= x + 1.6 - 1.6 \\ 2.9 &= x \\ 4.5 \\ -1.6 \\ \hline 2.9 \end{aligned}$$

25) $-x + 6 = 4$

$$\begin{aligned} -x + 6 - 6 &= 4 - 6 \\ -x &= -2 \\ \frac{-x}{-1} &= \frac{-2}{-1} \\ x &= 2 \\ \{2\} \end{aligned}$$

31) $-8 - y = 9$

$$\begin{aligned} -8 + 8 - y &= 9 + 8 \\ -y &= 17 \\ \frac{-y}{-1} &= \frac{17}{-1} \\ y &= -17 \\ \{-17\} \end{aligned}$$

35) $(r + 4) + 2 = 1$

$$\begin{aligned} (r + 4) + 2 - 2 &= 1 - 2 \\ (r + 4) &= -1 \\ r + 4 - 4 &= -1 - 4 \\ r &= -5 \\ \{-5\} \end{aligned}$$

43) $2 - (3 + y) = 6$

$$\begin{aligned} 2 - 2 - (3 + y) &= 6 - 2 \\ -(3 + y) &= 4 \\ \frac{-(3 + y)}{-1} &= \frac{4}{-1} \\ 3 + y &= -4 \\ 3 - 3 + y &= -4 - 3 \\ y &= -7 \\ \{-7\} \end{aligned}$$

When Solving, how do we deal with absolute value?

- Get the absolute value by itself
- Check to see if it's legal
- Put \pm on other side.

49) $6 + |t| = 14$

$$6 - 6 + |t| = 14 - 6$$

$$|t| = 8 \leftarrow \text{can't be negative}$$

$$t = \pm 8$$

$$\{\pm 8\}$$

$$|x| = -6$$

$$\emptyset$$

not
legal

pg 97
2-54 even