

Problem of the Day: Solve the equations.

a) $-3x - 6 = 10$

$$\begin{array}{r} -3x - 6 = 10 \\ +6 \quad +6 \\ \hline -3x = 16 \\ \div -3 \quad \div -3 \\ \hline x = -\frac{16}{3} \end{array}$$

b) $4x + 2 = -10$

$$\begin{array}{r} 4x + 2 = -10 \\ -2 \quad -2 \\ \hline 4x = -12 \\ \div 4 \quad \div 4 \\ \hline x = -3 \end{array}$$

Plan for the Day: Go over yesterday's integer quiz
 Daily integer quiz
 Notes on solving equations w/variables on both sides
 Homework Week 1 and Test of Knowledge due tom!!
 Objective: We will be able to solve equations with variables on both sides.
 Today is National Power Rangers Day!!

Write an equation for the model below.

$3x + 6 = x - 4$

Rules:

- pick one of the variables and move it to the other side by using the inverse (opposite) operation
- solve like a two-step equation
- plug answer back in to check

Example: $3x - 3 = 11 - 4x$

$$\begin{array}{r} 3x - 3 = 11 - 4x \\ +4x \quad +4x \\ \hline 7x - 3 = 11 \\ +3 \quad +3 \\ \hline 7x = 14 \\ \div 7 \quad \div 7 \\ \hline x = 2 \end{array}$$

Example 1: Solve. $3x + 6 = 16 - 2x$

$$\begin{array}{r} 3x + 6 = 16 - 2x \\ -2x \quad -2x \\ \hline 5x + 6 = 16 \\ -6 \quad -6 \\ \hline 5x = 10 \\ \div 5 \quad \div 5 \\ \hline x = 2 \end{array}$$

Example 2: Solve. $4x - 8 = 28 + 4x$

$$\begin{array}{r} 4x - 8 = 28 + 4x \\ -4x \quad -4x \\ \hline -8 = 28 \\ \text{false} \\ \hline \text{NO SOLUTION} \end{array}$$

Example 3: Solve. $2x - 8 = 5x + 4$

$$\begin{array}{r} 2x - 8 = 5x + 4 \\ -2x \quad -2x \\ \hline -8 = 3x + 4 \\ -4 \quad -4 \\ \hline -12 = 3x \\ \div 3 \quad \div 3 \\ \hline -4 = x \end{array}$$

Example 4: Solve. $4x - 8 = -8 + 4x$

Example 5: Write the equation represented and solve.

Example 6: Solve. $8m + 3 = 5m + 15$