

Name: _____

Date: _____

Solving Algebra Equations

Section A – Solving One Step Equations

Solve each equation.

(a) $w + 4 = 10$ $w =$ _____

(b) $y - 2 = 9$ $y =$ _____

(c) $6m = 42$ $m =$ _____

(d) $a - 25 = 5$ $a =$ _____

(e) $\frac{b}{5} = 40$ $b =$ _____

(f) $5 + k = 12$ $k =$ _____

One Step Addition Example
The Opposite of Addition is Subtraction

$$\begin{array}{r} y + 14 = 20 \\ -14 \quad -14 \\ \hline y = 6 \quad \checkmark \end{array}$$

The value which makes the equation true is 6.

ONE STEP SUBTRACTION EXAMPLE
The Opposite of Subtraction is Addition

$$\begin{array}{r} x - 120 = 80 \\ +120 \quad +120 \\ \hline x = 200 \quad \checkmark \end{array}$$

The value which makes the equation true is 200.

Multiplication Example
The Opposite of Multiplication is Division

$$\begin{array}{r} 3n = 12 \\ \cancel{3}n = \frac{12}{\cancel{3}} \\ n = 4 \quad \checkmark \end{array}$$

$\frac{3}{3}$ cancels down to become $1/1 = 1$
It is simply "n"
The value which makes the equation true is 4.

One Step Division Example
The Opposite of Division is Multiplication.

$$\begin{array}{r} \frac{k}{2} = 16 \\ \cancel{2} \times \cancel{2} = 16 \times 2 \\ k = 32 \quad \checkmark \end{array}$$

k is divided by 2, so we need to multiply both sides by 2
 $\frac{2}{2}$ cancels down to become $1/1 = 1$
It is simply "k"
The value which makes the equation true is 32.

Section B – Solving Two Step Equations

Solve each question.

(a) $6a + 2 = 20$ $a =$ _____

(b) $2d + 4 = 10$ $d =$ _____

(c) $4z - 8 = 8$ $z =$ _____

(d) $3c - 6 = 15$ $c =$ _____

(e) $\frac{r}{4} + 4 = 3$ $r =$ _____

(f) $4(m - 6) = 16$ $m =$ _____

BONUS (g) $4e + 5 = 14 + e$ $e =$ _____

1 WHICH TERM IS A LIKE TERM TO 35?
2 -15 IS THE LIKE TERM. SO -15.

$$\begin{array}{r} 4x + 15 = 35 \\ -15 \quad -15 \\ \hline 4x = 20 \\ \frac{4x}{4} = \frac{20}{4} \\ x = 5! \end{array}$$

3 WHAT IS HAPPENING TO X?
4 X IS BEING MULTIPLIED BY 4. SO DIVIDE BY 4.

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Section C – Application Problems



1. Tony had \$ z . He lost \$3.

a) Write an algebraic expression for the amount he has left.

Answer: \$ _____

Tony now has \$2 left.

a) Write an algebraic equation to show all of this information.

Answer: \$ _____

b) Solve your equation formed in (b) to find ' z '.

Answer: $z =$ _____

2. Brianna thinks of a number y , she multiplies it by 2 then subtracts 5.



a) Write an expression to show the number Brianna is thinking of.

Answer: _____

The answer that Brianna gets is 7.

b) Write an equation to show this information.

Answer: _____

c) Solve your equation to find the value of ' y '.

Answer: $y =$ _____