

## Solving Equations Practice

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For each question, state what *Algebra Tool* was used for each line as you solve the equation – be specific!

Solve the equation and check.

1)  $3(2x - 1) = 12$

2)  $(y - 7) - (y + 3) = 3y$

3)  $3(y + 8) = 4(y - 4)$

4)  $\frac{1}{4}x - \frac{1}{4} = -4$

5)  $\frac{15}{8}x + \frac{1}{4} = \frac{7}{4}x$

6)  $\frac{5(7 - x)}{2} = x$

7)  $0.05y + 0.10(5000 - y) = 0.20y$

8)  $1.2x - 2.5 = 0.4x + 3.34$

Solve the formula for the specified variable.

9)  $P = 2L + 2W$  for L

10)  $F = \frac{9}{5}C + 32$  for C

Answer Key

Testname: SOLVING\_EQUATIONS\_PRACTICE(02-07-2017)

1)  $\frac{5}{2}$

2)  $-\frac{10}{3}$

3) 40

4) -15

5) -2

6) 5

7) 2000

8) 7.3

9)  $L = \frac{P - 2W}{2}$

10)  $C = \frac{5}{9}(F - 32)$

# Solving Equations

$$\#1) \quad 3(2x-1) = 12$$

$$6x - 3 = 12 \quad \text{Dist}$$

$$6x = 15 \quad \text{A. I.}$$

$$x = \frac{15}{6} \quad \text{M. I.}$$

$$\boxed{x = \frac{5}{2}}$$

check

$$3(2(\frac{5}{2}) - 1) = 12$$

$$3(5 - 1) = 12$$

$$3(4) = 12$$

$$12 = 12 \checkmark$$

$$\#2) \quad (y-7) - (y+3) = 3y$$

$$y - 7 - y - 3 = 3y \quad \text{Dist}$$

$$-10 = 3y \quad \text{Assoc./Com}$$

$$\boxed{-\frac{10}{3} = y} \quad \text{M. I.}$$

$$\left(-\frac{10}{3} - 7\right) - \left(-\frac{10}{3} + 3\right)$$

$$\left(\frac{-10-21}{3}\right) - \left(\frac{-10+9}{3}\right) = 3\left(-\frac{10}{3}\right)$$

$$\left(-\frac{31}{3}\right) - \left(-\frac{1}{3}\right) = -10$$

$$\frac{-31 + 1}{3} = -10$$

$$-\frac{30}{3} = -10$$

$$-10 = -10 \checkmark$$

$$\#3) \quad 3(y+8) = 4(y-4)$$

$$3y + 24 = 4y - 16 \quad \text{Dist}$$

$$\boxed{40 = y} \quad \text{A. I.}$$

$$3(40+8) = 4(40-4)$$

$$3(48) = 4(36)$$

$$144 = 144 \checkmark$$

$$\#4) 4\left(\frac{1}{4}x - \frac{1}{4} = -4\right)$$

$$x - 1 = -16 \text{ Dist LCD}$$

$$\boxed{x = -15} \text{ A.A.}$$

$$\frac{1}{4} \cdot (-15) - \frac{1}{4} = -4$$

$$-\frac{15}{4} - \frac{1}{4} = -4$$

$$\frac{-15-1}{4} = -4$$

$$-\frac{16}{4} = -4$$

$$-4 = -4 \checkmark$$

$$\#5) 8\left(\frac{15}{8}x + \frac{1}{4} = \frac{7}{4}x\right)$$

$$15x + 2 = 14x \text{ Dist LCD}$$

$$\boxed{x = -2} \text{ A.A.}$$

$$\frac{15}{8}(-2) + \frac{1}{4} = \frac{7}{4}(-2)$$

$$-\frac{15}{4} + \frac{1}{4} = -\frac{7}{2}$$

$$\frac{-15+1}{4} = -\frac{7}{2}$$

$$-\frac{14}{4} = -\frac{7}{2}$$

$$-\frac{7}{2} = -\frac{7}{2} \checkmark$$

$$\#6) 2\left(\frac{5(7-x)}{2} = x\right)$$

$$5(7-x) = 2x \text{ Dist LCD}$$

$$35 - 5x = 2x \text{ Dist}$$

$$35 = 7x \text{ A.A.}$$

$$\boxed{5 = x}$$

$$\frac{5(7-5)}{2} = 5$$

$$\frac{5(2)}{2} = 5$$

$$\frac{10}{2} = 5$$

$$5 = 5 \checkmark$$

$$\#7) \quad 100(0.05y + 0.10(5000 - y) = 0.20y)$$

$$5y + 10(5000 - y) = 20y \text{ Dist LCN}$$

$$5y + 50000 - 10y = 20y \text{ Dist}$$

$$-5y + 50000 = 20y \text{ Assoc./Com}$$

$$50000 = 25y \text{ At. J.}$$

$$\boxed{2000 = y}$$

$$0.05(2000) + 0.10(5000 - 2000) = 0.20(2000)$$

$$100 + 0.10(3000) = 400$$

$$100 + 300 = 400$$

$$400 = 400 \checkmark$$

$$\#8) \quad 100(1.2x - 2.5 = 0.4x + 3.34)$$

$$120x - 250 = 40x + 334 \text{ Dist LCN}$$

$$80x = 584$$

$$\boxed{x = 7.3}$$

$$1.2(7.3) - 2.5 = 0.4(7.3) + 3.34$$

$$8.76 - 2.5 = 2.92 + 3.34$$

$$6.26 = 6.26 \checkmark$$

$$\#9) \quad P = 2L + 2W; \text{ for } L$$

$$P - 2W = 2L \text{ a. s.}$$

$$\boxed{\frac{P - 2W}{2} = L \text{ m. s.}}$$

$$\#10) \quad 5(F = \frac{9}{5}C + 32)$$

$$5F = 9C + 160 \text{ list } \text{a. s.}$$

$$5F - 160 = 9C \text{ a. s.}$$

$$\frac{5F - 160}{9} = C \text{ m. s.}$$