4.1 – Solve Simple Equations Worksheet #2

MPM1D

Jensen

SOLUTIONS

1. Solve

a) $x - 5 = 4$

$x = 4 + 5$

$x = 9$

b) $m + 8 = 11$

$m = 11 - 8$

$m = 3$

c) $y - 3 = 0$

$y = 0 + 3$

$y = 3$

d) $h + 2 = 6$

$h = 6 - 2$

$h = 4$

2. Solve

a) $x + 5 = 12$

$x = 12 - 5$

$x = 7$

b) $x - 6 = 7$

$x = 7 + 6$

$x = 13$

c) $y + 3 = 10$

$y = 10 - 3$

$y = 7$

d) $y - 4 = 2$

$y = 2 + 4$

$y = 6$

3. Solve

a) $x + 7 = 12$

$x = 12 - 7$

$x = 5$

b) $n - 8 = 11$

$n = 11 + 8$

$n = 19$

c) $-5 + y = -2$

$y = -2 + 5$

$y = 3$

d) $-9 + h = -6$

$h = -6 + 9$

$h = 3$

4. Solve

a) $3x = 12$

$x = \frac{12}{3}$

$x = 4$

b) $5y = 20$

$y = \frac{20}{5}$

$y = 4$

c) $\frac{n}{3} = 8$

$n = 8(3)$

$n = 24$

d) $-2k = 16$

$k = \frac{16}{-2}$

$k = -8$

5. Solve

a) $4z = -24$

$z = \frac{-24}{4}$

$z = -6$

b) $\frac{h}{-5} = -6$

$h = -6(-5)$

$h = 30$

c) $-6c = -42$

$c = \frac{-42}{-6}$

$c = 7$

d) $-9u = 45$

$u = \frac{45}{-9}$

$u = -5$

6. Find the root of each equation

a) $7x - 4 = 10$

$7x = 10 + 4$

$7x = 14$

$x = \frac{14}{7}$

$x = 2$

b) $7k + 2 = 16$

$7k = 14$

$k = \frac{14}{7}$

$k = 2$

c) $-p + 7 = 0$

$7 = p$

$p = 7$

d) $-12g - 33 = 0$

$-12g = 33$

$g = \frac{-33}{12}$

$g = \frac{-11}{4}$

7. Solve

a) $k - 4 = -9$

$k = -9 + 4$

$k = -5$

b) $6x = -30$

$x = \frac{-30}{6}$

$x = -5$

c) $\frac{q}{7} = 2$

$q = 2(7)$

$q = 14$

d) $2y - 7 = 9$

$2y = 9 + 7$

$2y = 16$

$y = \frac{16}{2}$

$y = 8$

e) $-3w - 1 = 14$

$-3w = 15$

$w = \frac{15}{-3}$

$w = -5$

f) $2q - 9 = -13$

$2q = -4$

$q = \frac{-4}{2}$

$q = -2$

8. Solve

a) $p + 9 = -2$

$p = -2 - 9$

$p = -11$

b) $-5x = 35$

$x = \frac{35}{-5}$

$x = -7$

c) $\frac{u}{4} = -8$

$u = -8(4)$

$u = -32$

d) $6r + 3 = 33$

$6r = 30$

$r = \frac{30}{6}$

$r = 5$

e) $10c - 6 = -16$

$10c = -10$

$c = \frac{-10}{10}$

$c = -1$

f) $-3v + 6 = -9$

$-3v = -15$

$v = \frac{-15}{-3}$

$v = 5$

9. At a bake sale, pies cost $7 each. One customer buys $84 worth of pies

a) Write an equation to model the number of pies the customer bought.

$$84 = 7p$$

b) Solve the equation.

$$7p = 84$$
$$p = \frac{84}{7}$$
$$p = 12$$

12. Solve each equation. Express fraction answers in lowest terms.

a) $2k - 7 = -8$

$$2k = -1$$
$$k = \frac{-1}{2}$$

b) $3x + 8 = 2$

$$3x = -6$$
$$x = \frac{-6}{3}$$
$$x = -2$$

c) $4m - 6 = 12$

$$4m = 18$$
$$m = \frac{18}{4}$$
$$m = \frac{9}{2}$$

d) $-9u + 8 = 23$

$$-9u = 15$$
$$u = \frac{-15}{9}$$
$$u = \frac{-5}{3}$$

13. Solve each equation. Express fraction answers in lowest terms.

a) $8r - \frac{3}{2} = -15$

$$2(8r) - 2\left(\frac{3}{2}\right) = -15(2)$$
$$16r - 3 = -30$$
$$16r = -27$$
$$r = \frac{-27}{16}$$

b) $-10h - 6 = -\frac{2}{5}$

$$5(-10h) - 5(6) = 5\left(\frac{-2}{5}\right)$$
$$-50h - 30 = -2$$
$$-50h = 28$$
$$h = \frac{-28}{50}$$
$$h = \frac{-14}{25}$$

Answers:

4.1 Solve Simple Equations, pages 186–195

1. a) $x = 9$ b) $m = 3$ c) $y = 3$ d) $h = 4$
2. a) $x = 7$ b) $x = 13$ c) $y = 7$ d) $y = 6$
3. a) $x = 5$ b) $n = 19$ c) $y = 3$ d) $h = 3$
4. a) $x = 4$ b) $y = 4$ c) $n = 24$ d) $k = -8$
5. a) $z = -6$ b) $h = 30$ c) $c = 7$ d) $u = -5$

6. a) $x = 2$ b) $k = 2$ c) $p = 7$ d) $g = -\dfrac{11}{4}$

7. a) $k = -5$ b) $x = -5$ c) $q = 14$
   d) $y = 8$ e) $w = -5$ f) $q = -2$
8. a) $p = -11$ b) $x = -7$ c) $u = -32$
   d) $r = 5$ e) $c = -1$ f) $v = 5$
9. The variable used may vary.
   a) $7p = 84$ b) 12 pies
10. The variable used may vary.
    a) $50j = 700$ b) 14 jerseys
11.

Step	Explanation
$3x - 8 = 7$	Given equation
$3x - 8 + 8 = 7 + 8$	Add 8 to both sides.
$3x = 15$	Simplify by adding integers.
$\dfrac{3x}{3} = \dfrac{15}{3}$	Divide both sides by 3.
$x = 5$	Divide integers to give the solution for x.

12. a) $k = -\dfrac{1}{2}$ b) $x = -2$ c) $m = \dfrac{9}{2}$ d) $u = -\dfrac{5}{3}$

13. a) $r = -\dfrac{27}{16}$ b) $h = -\dfrac{14}{25}$