1. Solve for x in the given equations.

(a) $-20 = -4x - 6x$ (b) $6 = 1 - 2x + 5$ (c) $8x - 2 = -9 + 7x$

(d) $x + 5 = -5x + 5$ (e) $x - 1 = 5x + 3x - 8$ (f) $5x - 14 = 8x + 4$

(g) $-8 = -(x + 4)$ (h) $12 = -4(-6x - 3)$ (i) $14 = -(x - 8)$

(j) $-(7 - 4x) = 9$ (k) $-18 - 6x = 6(1 + 3x)$ (l) $5x + 34 = -2(1 - 7x)$

(m) $2(4x - 3) - 8 = 4 + 2x$ (n) $3x - 5 = -8(6 + 5x)$ (o) $-(1 + 7x) - 6(-7 - x) = 36$

2. Solve for y in the given equations.

(a) $6y - 1 = 12$ (b) $7y - 2 = 12$ (c) $9y + 6 = 12$

(d) $3y - \frac{1}{3} = 12y$ (e) $\frac{3y}{5} - 8 = \frac{3}{6}$ (f) $9y - 6 = \frac{y}{2}$

3. Solve for z in the given equations.

(a) $6 = \frac{z}{4} + 2$ (b) $-6 + \frac{z}{4} = -5$ (c) $9z - 7 = -7$ (d) $0 = \frac{4 + z}{5}$

(e) $-4 = \frac{z}{20} - 5$ (f) $-1 = \frac{5 + z}{6}$ (g) $\frac{z + 9}{3} = 8$ (h) $2(z + 5) = -2$

(i) $-9z + 1 = -80$ (j) $-6 = \frac{z}{7} - 10$ (k) $-2 = 2 + \frac{z}{5}$ (l) $144 = -12(z + 5)$

(m) $-15 = -4z + 5$ (n) $10 - 6z = -104$ (o) $8z + 7 = 31$ (p) $-9z - 13 = -103$

(q) $\frac{z + 3}{-12} = -1$ (r) $-10 = -10 + 7z$ (s) $-10 = 10(z - 9)$ (t) $\frac{z}{9} - 1 = -2$

(u) $9 + 9z = 9$ (v) $7(9 + z) = 84$ (w) $\frac{8 + z}{-4} = 5$ (x) $-243 = -9(10 + z)$

4. Solve for a in the given equations.

(a) $\frac{a}{4} - 4 = \frac{7a}{3} + 9$

(b) $\frac{8a}{9} - 2 = \frac{2a}{7} + 6$

(c) $2(2a - 2) = 4(5 - 7a) - 3$

(d) $\frac{4a}{5} + \frac{2}{3}(a - 5) = \frac{a + 2}{6}$

(e) $\frac{-a}{3} + \frac{a}{2} - a + 6 = 0$

(f) $3a - \frac{a}{3} + \frac{a - 4}{3} = 7a$

5. Solve for the variable in the given equations.

(a) $3x - 4 = 2 - 4(x - 3)$

(b) $\frac{3 - 2t}{4} = 7t + 1$

(c) $\frac{2(w - 3)}{5} = \frac{4}{15} - \frac{3w + 1}{9}$

(d) $-\frac{2}{100}y + 1000 = 0$

Answers

1. (a) $x = 2$ (b) $x = 0$ (c) $x = -7$ (d) $x = 0$ (e) $x = 1$
   (f) $x = -6$ (g) $x = 4$ (h) $x = 0$ (i) $x = -6$ (j) $x = 4$
   (k) $x = -1$ (l) $x = 4$ (m) $x = 3$ (n) $x = -1$ (o) $x = 5$

2. (a) $y = \frac{13}{6}$ (b) $y = 2$ (c) $y = \frac{2}{3}$ (d) $y = \frac{-1}{27}$ (e) $y = \frac{85}{6}$ (f) $y = \frac{12}{17}$

3. (a) $z = 16$ (b) $z = 4$ (c) $z = 0$ (d) $z = -4$ (e) $z = 20$ (f) $z = -11$
   (g) $z = 15$ (h) $z = -6$ (i) $z = 9$ (j) $z = 28$ (k) $z = -20$ (l) $z = -17$
   (m) $z = 5$ (n) $z = 19$ (o) $z = 3$ (p) $z = 10$ (q) $z = 9$ (r) $z = 0$
   (s) $z = 8$ (t) $z = -9$ (u) $z = 0$ (v) $z = 3$ (w) $z = -28$ (x) $z = 17$

4. (a) $a = -\frac{156}{25}$ (b) $a = \frac{252}{19}$ (c) $a = \frac{21}{32}$ (d) $a = \frac{110}{39}$ (e) $a = \frac{36}{5}$ (f) $a = -\frac{1}{3}$

5. (a) $x = \frac{18}{7}$ (b) $t = -\frac{1}{30}$ (c) $w = \frac{61}{33}$ (d) $y = 50000$