Problem set - equations - 1

Name: _____ Date: _____

Write each solution exactly. Show all of your work. You may use a calculator and notes.

1. Use substitution to evaluate each expression for the given values of the variable.

   (a) $x - 3$; $x = 7$.

   (b) $\frac{t}{5}$; $t = 30$.

   (c) $0.43x$; $x = -2$.

   (d) $2y + 5$; $y = 0.8$.

   (e) $\frac{x - 7}{5}$; $x = 3$.

   (f) $\frac{8}{3}P - \frac{2}{3}$; $P = 12$.

   (g) $x + 5x$; $x = -3$.

   (h) $2.0(T - 4.1) + 3.1(T + 1.0)$; $T = 0$.

   (i) $2x - 3y + 3$; $x = 2$, $y = -2$.

   (j) $x^2 - 4$; $x = 2$, $x = -2$.

   (k) $\frac{x + 1}{x - 1}$; $x = 3$.

   (l) $\frac{1}{y}$; $y = 120$.

2. Check to determine if the given value of the unknown is a solution to the equation.

   (a) $x + 5 = 10$; $x = 5$.

   (b) $x - 5 = 10$; $x = 15$.

   (c) $2t = 1.80$; $t = 0.85$.

   (d) $3y + 1 = 10$; $y = 2$.

(e) $t - 4 = 14$; $t = 16$.

(f) $2x - 7 = 23$; $x = 15$.

(g) $x - 7.5 = 2.3$; $x = 9.8$.

(h) $\dfrac{x-2}{x+3} = 2$; $x = -8$.

3. Solve each equation, then check your result by substitution.

(a) $x + 10 = 19$

(b) $t + 12 = 8$

(c) $3x = 18$

(d) $5t = 25$

(e) $\dfrac{1}{2}x = 9$

(f) $\dfrac{2}{3}t = 8$

(g) $0.4x = 4.0$

(h) $-0.3t = 12$

(i) $2x + 1 = 11$

(j) $2t - 1 = 7$

(k) $3x + 20 = 14$

(l) $5x - 2 = 23$

(m) $0.4x = 4.0$

(n) $-0.3t = 12$