

$$4 + 9(3x - 7) = -42x - 13 + 23(3x - 2)$$

$$4 + 27x - 63 = -42x - 13 + 69x - 46$$

$$27x - 59 = 27x - 59$$

$$-59 = -59$$

Identity

$$10 + 4(p - 5) = 0$$

$$10 + 4p - 20 = 0$$

$$4p - 10 = 0$$

$$4p = 10$$

$$p = \frac{10}{4} = \frac{5}{2}$$

Conditional

$$6 + 14(t - 8) = 95$$

$$6 + 14t - 112 = 95$$

$$14t - 106 = 95$$

$$14t = 201$$

Conditional

$$t = \frac{201}{14}$$

$$\begin{array}{r} 14 \overline{) 201.00} \\ \underline{14} \\ 61 \\ \underline{56} \\ 50 \\ \underline{42} \\ 80 \end{array}$$

$$12c + 5(5 + 3c) = 3(9c - 4)$$

$$12c + 25 + 15c = 27c - 12$$

$$27c + 25 = 27c - 12$$

$$25 \neq -12$$

Contradiction

$$4(7d + 18) = 13(3d - 2) - 11d$$

$$28d + 72 = 39d - 26 - 11d$$

$$28d + 72 = 28d - 26$$

$$72 \neq -26$$

Contradiction

What you will learn about:
Solving Equations
With Fractions and Decimals

$$\left(\frac{6}{1}\right)\left(\frac{1}{6}\right) = \frac{6}{6} = 1$$

$$\left(\frac{2}{5}\right)\left(\frac{20}{7}\right) = \frac{40}{5}$$

Solve:

~~$$\left(\frac{1}{8}y\right) - \left(\frac{1}{3}\right) = \left(\frac{5}{6}\right)$$~~

$$y - 2 = 5$$

$$y = 7$$

~~$$\left(\frac{1}{2}v\right) + \left(\frac{2}{5}v\right) - \left(\frac{3}{4}v\right)$$~~

$$120 = 10v + 8v - 15v$$

$$120 = 3v$$

$$v = 40$$

$$-5 = \frac{1}{4}(8x + 4)$$

$$-5 = 2x + 1$$

$$-6 = 2x$$

$$x = -3$$

~~$$\frac{5x+3}{4} - \frac{x}{2}$$~~

$$2(5x+3) = 4x$$

$$10x + 6 = 4x$$

$$-10x \quad 6 = -6x$$

$$x = -1$$

~~$$\left(\frac{1}{4}x\right) + \left(\frac{1}{2}\right) = \left(\frac{5}{8}\right)$$~~

$$2x + 4 = 5$$

$$2x = 1$$

$$x = \frac{1}{2}$$

~~$$8(a) + \left(\frac{3}{4}\right) = \left(\frac{3}{8}a\right) - \left(\frac{1}{2}\right)$$~~

$$8a + 6 = 3a - 4$$

$$5a = -10$$

$$a = -2$$

$$\frac{1}{2}(y-5) = \frac{1}{4}(y-1)$$

$$4\left(\frac{1}{2}y\right) - \left(\frac{5}{2}\right) = \left(\frac{1}{4}y\right) - \left(\frac{1}{4}\right)$$

$$2y - 10 = y - 1$$

$$y - 10 = -1$$

$$y = 9$$

~~$$\frac{-2z-5}{4} = \frac{z}{8}$$~~

$$8(-2z-5) = 4z$$

$$-16z - 40 = 4z$$

$$-40 = 20z$$

$$z = -2$$

$$\left(\frac{1}{4}\right)\left(\frac{8}{1}\right) = \frac{8}{4}$$

~~$$\left(\frac{5}{2}\right)\left(\frac{1}{1}\right) = 2$$~~

~~$$\left(\frac{5}{2}\right)\left(\frac{4}{1}\right)$$~~

$$\frac{20}{2} = 10$$

$$12 \left(\frac{1}{3}x \right) + \left(\frac{1}{4} \right)^{12} = (x)^{12} - \left(\frac{1}{6} \right)^{12}$$

$$4x + 3 = 12x - 2$$

$$-4x \quad -4x$$

$$3 = 8x - 2$$

$$+2 \quad +2$$

$$5 = 8x$$

$$x = \frac{5}{8}$$

$$30 \left(\frac{2}{3}x \right) + \left(\frac{1}{5} \right)^{30} = (2x)^{30} - \left(\frac{3}{10} \right)^{30}$$

$$20x + 6 = 60x - 9$$

$$6 = 40x - 9$$

$$15 = 40x$$

$$x = \frac{15}{40} = \frac{3}{8}$$

$$12 \left(\frac{1}{2}x \right) - \left(\frac{5}{3} \right)^{12} = \left(-\frac{1}{2}x \right)^{12} + \left(\frac{19}{4} \right)^{12}$$

$$6x - 20 = -6x + 57$$

$$12x - 20 = 57$$

$$12x = 77$$

$$x = \frac{77}{12}$$

$$4 \left(\frac{2w+3}{1} \right) + (1)^4 = \left(\frac{3w+2}{1} \right)^4$$

$$2(2w+3) + 4 = 3w+2$$

$$4w + 6 + 4 = 3w + 2$$

$$4w + 10 = 3w + 2$$

$$w + 10 = 2$$

$$w = -8$$

$$12 \left(\frac{1}{4}x \right) - \left(\frac{1}{2} \right)^{12} = \left(\frac{3}{4}x \right)^2 + \left(\frac{2}{3} \right)^{12}$$

$$3x - 6 = 9x + 8$$

$$-6 = 6x + 8$$

$$-14 = 6x$$

$$x = \frac{-14}{6} = \frac{-7}{3}$$

$$\frac{2}{9}x + 8 = 16$$

$$\left(\frac{9}{2} \right) \left(\frac{2}{9}x \right) = (8) \frac{9}{2}$$

$$x = \frac{72}{2} = 36$$

$$\frac{3}{4} \left(\frac{4}{5}x - 2 \right) = \frac{11}{4}$$

$$20 \left(\frac{12}{20}x \right) - \left(\frac{6}{4} \right)^{20} = \left(\frac{11}{4} \right)^{20}$$

$$12x - 30 = 55$$

$$12x = 85$$

$$x = \frac{85}{12}$$

$\frac{2}{7}$

$$100(0.06x) + (0.02)^{100} = (0.25x)^{100} - (1.5)^{100}$$

$$X = \frac{152}{19}$$

$$\begin{array}{r} 6x + 2 = 25x - 150 \\ -6x \quad -6x \end{array}$$

$$X = 8$$

$$2 = 19x - 150$$

$$152 = 19x$$

$$100(0.25x) + [0.05(x+3)]^{100} = (2.85)^{100}$$

$$25x + 5(x+3) = 285$$

$$25x + 5x + 15 = 285$$

$$X = 9$$

$$30x + 15 = 285$$

$$30x = 270$$

$$0.25n + 0.05(n+5) = 2.95$$

$$25n + 5(n+5) = 295$$

$$25n + 5n + 25 = 295$$

$$30n = 270$$

$$n = 9$$

$$0.05n + 0.10(n+7) = 3.55$$

$$5n + 10(n+7) = 355$$

$$5n + 10n + 70 = 355$$

$$15n + 70 = 355$$

$$15n = 285$$

$$n = 19$$

$$\begin{array}{r} 355 \\ - 70 \\ \hline 285 \end{array}$$