

Algebra 2.1 Equations

1/10/2005

Linear Equations eg $3x+2=5$ (one variable, first power)
 $3x=3$ $x=1$

can have conditional - one solution $2x+2=5x-15$ $-3x=-17$ $x=\frac{17}{3}$

contradiction - no solution $2x+8=2(x-5)$ $8=-10$ \emptyset no solution

identity - infinite solutions $7x+28=7(x+4)$ $7x+28=7x+28$ all real #'s \mathbb{R}

Answers can
not make the
denominator
= 0

solve for x $\frac{2}{x-3} = \frac{5}{x+1}$ $2x+2=5x-15$ $17=3x$ $x=\frac{17}{3}$ since $x \neq 3$
 $x \neq -1$

solve for x $\frac{1}{2x-1} = \frac{4}{8x-4}$ $\frac{1}{2x-1} = \frac{1}{2x-1}$ identity \mathbb{R} except $\frac{1}{2}$

solve for x $\frac{9x}{3x-1} = 2 + \frac{3}{x-1}$ $9x=6x-2+3$ $3x=1$ $x=\frac{1}{3}$ no solution \emptyset

$x \neq 3$

solve for x $\frac{2}{x-3} \cdot \frac{5}{3x} = -1$ $\frac{2}{x-3} \cdot \frac{5}{-1(x-3)} = -1$ $\frac{2}{x-3} + \frac{5}{x-3} = -1$ $7 = -x+3$ $x=-4$

solve for x $4(8+x) + 1.7 = 8.5$ $32 + 12x + 1.7 = 8.5$ $120x + 337 = 85$ $x = -\frac{21}{10}$

$y \neq \pm 2$

solve for y $\frac{2}{y^2-4} - \frac{1}{y-2} = \frac{3}{y+2}$ $(y+2)(y-2) \left[\frac{2}{y^2-4} - \frac{1}{y-2} \right] = \frac{3}{y+2} (y+2)(y-2)$

$2 - 1(y+2) = 3(y-2)$ $2y-2 = 3y-6$ $6 = 4y$ $y = \frac{3}{2}$

Algebra 2.1 cont.

1/11/2005

Formulas

Solve for h in $V = \frac{1}{3}\pi r^2 h$



$$\frac{V}{\pi r^2} = \frac{1}{3}h$$

$$h = \frac{3V}{\pi r^2}$$

Solve for i $R = \frac{V}{I}$

$$I = \frac{V}{R}$$

Solve for p $A = P + Prt$

$$A = P(1 + rt)$$

$$\frac{A}{1 + rt} = P$$

$$P = \frac{A}{1 + rt}$$

Solve for g $\frac{1}{f} + \frac{1}{p} = \frac{1}{g}$

$$fpg \left(\frac{1}{f} + \frac{1}{p} \right) = \frac{1}{g} (fpg)$$

$$pg + fg = fp$$

$$g(p + f) = fp$$

$$g = \frac{fp}{p + f}$$

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

$$C \cdot \frac{9}{5} = F - 32$$

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

$$(x + 5)^2 + 3 = (x - 2)^2$$

$$x^2 + 10x + 25 + 3 = x^2 - 4x + 4$$

$$14x = -24$$

$$x = -\frac{12}{7}$$