Solve

$* 3x^3 + 7x^2 - 22x - 8 = 0$

$x = -4$

-4	3	7	-22	-8
		-12	20	8
	3	-5	-2	0

$(x+4)(3x^2 - 5x - 2) = 0$

$(x+4)(3x+1)(x-2) = 0$

$x = -4, \; x = -\frac{1}{3}, \; x = 2$

11.6 Solving Rationals

Solve (=)

1. linear
2. Abs. Values
3. Polynomials (= 0)
4. Rationals

Check my answers

Cant do in Math

1. divide by 0
2. $|x| \neq -\#$

$\frac{6}{1}\cdot\frac{x}{3} + \frac{6}{1}\cdot\frac{1}{2} = 5\frac{6}{1}$

Solve

LCD = 6

$2x + 3 = 30$

$2x = 27$

$x = \frac{27}{2}$

$\frac{2x}{1}\cdot\frac{5}{x} + \frac{2x}{1}\cdot\frac{1}{2x} = \frac{7x}{1}\cdot\frac{2}{1}$

Rational eqn

① wipe out Fractions

LCD

$x \neq 0$

$10 + x = 14x$

$10 = 13x$

$\frac{10}{13} = x$

$\frac{(x+2)(x-1)}{1}\cdot\frac{4x}{x+2} + \frac{(x+2)(x-1)}{1}\cdot\frac{2}{x-1} = \frac{4(x+2)(x-1)}{1}$

Solve

$x \neq -2$

$x \neq 1$

$LCD = (x+2)(x-1)$

$4x(x-1) + 2(x+2) = 4[(x+2)(x-1)]$

$4x^2 - 4x + 2x + 4 = 4(x^2 + x - 2)$

$4x^2 - 2x + 4 = 4x^2 + 4x - 8$

$+2x \quad +8 \qquad +2x \quad +8$

$=$

$12 = 6x \rightarrow x = 2$

$$\frac{4x}{x+3} - \frac{12}{x-3} = \frac{4x^2+36}{x^2-9}$$

Solve

Workspace Annotation - Untitled, Page 6/6 (Zoom 100%) *

$$\frac{(x+3)(x-3)}{1}\cdot\frac{4x}{x+3} - \frac{(x+3)(x-3)}{1}\cdot\frac{12}{x-3} = \frac{(x+3)(x-3)}{1}\cdot\frac{4x+36}{x^2-9}$$

$$=1$$

Solve

LCD $= (x+3)(x-3)$

$x \neq -3, x \neq 3$

Quiz opens at midnight

$$4x(x-3) - 12(x+3) = 4x^2+36$$

$$4x^2 - 12x - 12x - 36 = 4x^2 + 36$$

$$-24x - 36 = 36$$

$$-24x = 72 \rightarrow x = -\frac{72}{24} \neq -3$$

$\emptyset$

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Verbal Question Only - Verbal Question 6

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

21 22 23 24 25 26 27 28 29 30 31 32

add or subtract

$$\frac{4x(x-3)}{x+3(x-3)} - \frac{12(x+3)}{x-3(x+3)} + \frac{4x^2+36}{x^2-9} \quad \text{LCD}$$

$$(x+3)(x-3)$$

$$\frac{4x^2-12x}{(x+3)(x-3)} - \frac{12x+36}{(x+3)(x-3)} + \frac{4x^2+36}{(x+3)(x-3)}$$

$$\frac{8x^2-24x}{(x+3)(x-3)} \rightarrow \frac{8x(x-3)}{(x+3)(x-3)} \rightarrow \frac{8x}{x+3}$$

$$\frac{(x+3)(x-3)}{1}\cdot\frac{4x}{x+3} - \frac{12}{x+3}\cdot\frac{(x+3)(x-3)}{1}$$

Simplify

① wipe out

$$\frac{4x^2+36}{x^2-9}\cdot\frac{(x+3)(x-3)}{1}$$

2(1)

$(x+3)(x-3)$

$$\frac{4x(x-3)-12(x+3)}{4x^2+36} \rightarrow \frac{4x^2-12x-12x-36}{4x^2+36}$$

$$\rightarrow \frac{4x^2-24x-36}{4x^2+36}$$

$$\frac{4(x^2-6x-9)}{4(x^2+9)}$$

Solve

$LCD = 5(x+1)$

$$\frac{5(x+1)}{11}\cdot\frac{1}{5(x+1)} = \frac{3}{x+1}\cdot\frac{5(x+1)}{1} - \frac{7}{8}\cdot\frac{5(x+1)}{1} \qquad x \neq -1$$

$$1 = 15 - 7(x+1)$$

$$1 = 15 - 7x - 7$$

$$1 = -7x + 8$$

$$-7 = -7x$$

$x = 1$