

June 6, 2017

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

$$\frac{10}{1} \left[\frac{x}{2}, -1 + \frac{3}{5}x = \frac{x}{5} + \frac{4}{5} \right]$$

$$5x - 10 + 6x = 2x + 8$$

$$11x - 10 = 2x + 8$$

$$\begin{array}{r} 11x - 10 \\ -2x + 10 \\ \hline 9x = 18 \end{array}$$

$$\frac{9}{9} \cdot \frac{1}{9} = \frac{1}{9} = 1 \quad \frac{9x}{9} = \frac{18}{9}$$

$$x = 2$$

Jun 6-8:49 AM

Chk $x = 2$

$$\frac{1}{2}(2-2) + \frac{3}{5}(2) = \frac{1}{5}(2+4)$$

$$\frac{1}{2}(0) + \frac{6}{5} = \frac{1}{5} \cdot \frac{6}{1}$$

$$0 + \frac{6}{5} = \frac{6}{5} \checkmark$$

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goal
 $x = \text{all stuff}$

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$$\begin{aligned} & \sqrt[2]{1 + (x^2 - \frac{1}{4x^2})^2} \\ & \sqrt[2]{1 + (\frac{x^2}{1} - \frac{1}{4x^2})^2} \\ & \sqrt[2]{1 + (\frac{4x^4 - 1}{4x^2})^2} \\ & \sqrt[2]{1 + \frac{16x^4 - 8x^2 + 1}{16x^4}} \\ & \sqrt[2]{\frac{(16x^4 - 8x^2 + 1) + 16x^4}{16x^4}} \\ & \sqrt[2]{\frac{32x^4 - 8x^2 + 1}{16x^4}} \\ & \sqrt[2]{\frac{16x^4 - 4x^2 + 1}{16x^4}} \\ & \left(\frac{16x^4 - 4x^2 + 1}{16x^4} \right)^{\frac{1}{2}} \\ & \left(\frac{(4x^2 - 1)^2}{(4x^2)^2} \right)^{\frac{1}{2}} \\ & \frac{4x^2 - 1}{4x^2} \\ & \frac{4x^2}{4x^2} - \frac{1}{4x^2} \\ & 1 - \frac{1}{4x^2} \end{aligned}$$

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$$\frac{x^3}{1} - \frac{1}{4x^3}$$

$$x^3 \cdot \frac{4x^3}{4x^3} - 1$$

$$\frac{4x^6 - 1}{4x^3}$$

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$$\frac{x^3}{1} \rightarrow \frac{4x^3}{4x^3} = \frac{4x^6}{4x^3}$$

F.P.F. $\frac{a}{b} \cdot \frac{c}{c} = \frac{ac}{bc}$

$$\frac{1}{1} \cdot \frac{16x^6}{16x^6} = \frac{16x^6}{16x^6}$$

Jun 6-9:23 AM

$\sqrt{4} = 2 ?$
 $2^2 = 4$
 $\sqrt{2^2} = 2$
 $\sqrt{4 \cdot x^2} = \sqrt{2^2 \cdot x^2} = 2x$
 $?$ $\sqrt{4+x^2}$
 $\sqrt{(4+x)^2} = 4+x$

Jun 6-9:11 AM

Real \mathbb{R}
 Rational: $\frac{1}{2}, 0.06, \frac{7}{3}, 3:7$
 Irrational: $\pi, e, \sqrt{2}, \sqrt{3}$
 Number line from $-\infty$ to $+\infty$ with tick marks at $-\pi, -3, 0, \frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \pi$.

Jun 6-10:19 AM

Complex
 Real α
 Imaginary i

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