

November 13, 2015

Simplifying

#14) $\frac{v^2 - 7v - 30}{v^2 - 5v - 24}$ } * Factor 1st!

$\frac{(v-10)(v+3)}{(v-8)(v+3)}$

$\frac{v-10}{v-8}$

Nov 13-9:07 AM

#21) $\frac{6v^3 + 42v^2}{2v^2 + 26v + 84}$

$\frac{6v^2(v+7)}{2(v^2 + 13v + 42)} = \frac{3v^2(v+7)}{\cancel{2}(v+6)(v+7)}$

$\frac{3v^2}{2(v+6)(v+7)} = \frac{3v^2}{v+6}$

Nov 13-9:13 AM

Fractions

① I P I $\frac{a}{b} \cdot \frac{c}{d} = \frac{a \cdot c}{b \cdot d} = \frac{a}{b}$ (Common factor)

② Multiplication $\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$

③ Division $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$

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④ Addition w/ Like Denominators

$\frac{a}{b} \pm \frac{c}{b} = \frac{a \pm c}{b}$

Like

Nov 13-9:20 AM

$\frac{3x^2 + 2x}{x-1} \cdot \frac{(10x-5)}{x-1}$ (red flag!)

Like

$\frac{3x^2 + 2x - 10x + 5}{x-1}$ (Combine like terms)

$\frac{3x^2 - 8x + 5}{x-1}$ * Now factor

$\frac{(3x-5)(x-1)}{(x-1)}$

$3x-5$

$ac = 15$
 $b = -8$
 $\frac{-5}{3} \frac{3}{5}$
 $3x^2 - 5x - 3x + 5$
 $x(3x-5) - 1(3x-5)$
 $(3x-5)(x-1)$

Nov 13-9:22 AM

⑤ Addition w/ Unlike Denominators

$\frac{a}{b} \pm \frac{c}{d} = \frac{ad \pm bc}{bd}$ (bd = cd)

$72 = 2^3 \cdot 3^2$ $108 = 2^2 \cdot 3^3$

① LCM of 72 & 108? (36)

$\frac{72x + 108}{36} = \frac{2}{36} \cdot \frac{108}{36} = \frac{3}{36}$

2 & 3 are A.P!

Nov 13-9:29 AM

Least Common Denominator (LCD)

What is the LCD of 72 & 108?

$$72 \cdot 108 = 7776 \leftarrow \text{CD}$$

$$72 = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$$

$$108 = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3$$

$$2^3 \cdot 3^3 = 8 \cdot 27 = 216$$

$$\frac{216}{72} = 3 \quad \frac{216}{108} = 2$$

3 & 2 are A.P.!

Nov 13-9:37 AM

$$\frac{7}{15xy^2} - \frac{11}{20x^2}$$

$15 = 3 \cdot 5$
 $20 = 2 \cdot 2 \cdot 5$

unlike!

LCD: $3 \cdot 2 \cdot 2 \cdot 5 = 2 \cdot 4 \cdot 5$
 $= 12 \cdot 5$
 $= 60$

$60x^2y^2 \leftarrow \text{LCD}$

Nov 13-9:45 AM