November 11, 2015

#1) $49x^2 - 81$

$(7x+9)(7x-9)$

$49x^2 - 63x + 63x - 81$

$49x^2 - 81$

Nov 11-1:19 PM

#2) $y^2 - 1$

$(y+1)(y-1)$

$y^2 - y + y - 1$

$y^2 - 1$

Nov 11-1:20 PM

$x^2 - 11x + 24 = 0$

$ac = 24$

$x^2 - 8x - 3x + 24 = 0$ $\quad b = -11$

$x(x-8) - 3(x-8) = 0$ $\quad -8, -3$

$(x-8)(x-3) = 0$

① $x - 8 = 0$

$x = 8$

② $x - 3 = 0$

$x = 3$

Nov 11-1:21 PM

Simplifying Rational Expression

① IPX $\quad \frac{a}{b} \cdot \frac{c}{c} = \frac{ac}{bc} = \frac{a}{b}$ (factor out common factor; R.P.)

② Multiplication

$\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$ ← R.P.

③ Division

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

Nov 11-1:24 PM

K C F

$\frac{6x+6}{x^2-49} \div \frac{5-5x}{x^2-5x-14}$

① Factor everything that can be factored.

② Divid out Common factors.

$\frac{6x+6}{x^2-49} \cdot \frac{x^2-5x-14}{5-5x}$

$\frac{6(x+1)}{(x+7)(x-7)} \cdot \frac{(x-7)(x+2)}{5(1-x)}$

$\frac{6(x+1)}{(x+7)} \cdot \frac{(x+2)}{5(1-x)}$

$\frac{6(x+1)(x+2)}{5(x+7)(1-x)}$

Nov 11-1:33 PM

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

Nov 11-1:53 PM

(4) Addition w/ Like Denominator

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

$\frac{5m}{2m} + \frac{m}{2m} = \frac{5m^1 + 1m^1}{2m}$

Like

$= \frac{6m}{2m}$

$= \frac{3m}{m}$

Nov 11-1:55 PM

$\frac{6x^2}{2x-5} - \frac{(25+2x^2)}{2x-5}$

$\frac{6x^2 - 25 - 2x^2}{2x-5}$

$\frac{4x^2 - 25}{2x-5} = \frac{(2x+5)(2x-5)}{(2x-5)}$

$= 2x+5$

Nov 11-2:04 PM

$\frac{2x+1}{x-3} + \frac{3x+6}{x-3}$

$\frac{2x+1+3x+6}{x-3}$ Combine like terms

$\frac{5x+7}{x-3}$

Nov 11-2:01 PM

(5) Addition w/ Unlike Denominators

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

72 108

(a) $72x + 108$

$36(2x+3)$

Nov 11-2:13 PM

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

$2 \cdot 36$

$2 \cdot 18$

$2 \cdot 9$

$3 \cdot 3$

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

$2 \cdot 54$

$2 \cdot 27$

$3 \cdot 9$

$3 \cdot 3$

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

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

$2 \cdot 2 \cdot 3 \cdot 3 = 4 \cdot 9 = 36$

GCF

GCF vs. LCD

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

36 Divides 72 & 108

216 That 72 & 108 divides into

Nov 11-2:15 PM

$\frac{7}{15xy^2} - \frac{11}{20x^2} = \frac{7(4x) - 11(3y^2)}{60x^2y^2}$

$15xy^2 = 3 \cdot 5 \cdot x \cdot y^2$

$20x^2 = 2^2 \cdot 5 \cdot x^2$

$3 \cdot 2^2 \cdot 5$

$= 3 \cdot 4 \cdot 5$

$= 12 \cdot 5$

$= 60$

$= \frac{28x - 33y^2}{60x^2y^2}$

Nov 11-2:25 PM

$$\frac{5}{x} + \frac{3}{x^2} = \frac{5(x)+3}{x^2}$$

LCD: x^2

$$= \frac{5x+3}{x^2}$$

Nov 11-2:35 PM

LCD: $4x^2$

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

$\frac{4x^2}{2x} = 2x$

$$= \frac{6x+5}{4x^2}$$

Nov 11-2:37 PM

7.3 pg 290 #1 – #48 mod 3

Nov 11-2:41 PM