November 11, 2015

#9) $6x^2 - 18x - 18 = 6$

$6x^2 - 18x - 24 = 0$

$6(x^2 - 3x - 4) = 0$

$6(x^2 - 4x + x - 4) = 0$ $ac = -4$, $b = -3$ → $-4, +1$

$6(x(x-4)+1(x-4)) = 0$

$6(x-4)(x+1) = 0$

$(6x - 24)(x+1) = 0$ Zero Factor Theorem: $ab = 0$

① $6x - 24 = 0$

$6x = 24$

$\boxed{x = 4}$

② $x + 1 = 0$

$\boxed{x = -1}$

Nov 11-9:04 AM

Simplifying Rational Expressions

① $\frac{a}{b} \cdot \frac{c}{c} = \boxed{\frac{ac}{bc}} = \frac{a}{b}$ Dividing out 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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$\frac{8x^2y^3}{5z^4} \div \frac{2x^4y}{20x^2z^9}$

$\frac{8x^2y^3}{5z^4} \cdot \frac{20x^2z^9}{2x^4y}$

$\frac{8y^2}{1} \cdot \frac{2z^5}{1} = \boxed{16y^2z^5}$

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

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

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

$\boxed{\frac{30(x-1)(1-x)}{(x+7)(x-7)(x-7)(x+2)}}$

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