Bellwork Alg 2 Monday, December 16, 2019

Find the EXACT solutions to each equation.

1. $\frac{x}{x+4} - \frac{x+34}{x^2+3x-4} = \frac{-7}{x-1}$

2. $\frac{2x}{x^2-1} = \frac{4}{x^2+2x-3}$

ANSWERS

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1. $\frac{x}{x+4} - \frac{x+34}{x^2+3x-4} = \frac{-7}{x-1}$

$(x+4)(x-1)\left[\frac{x}{x+4} - \frac{x+34}{(x+4)(x-1)}\right] = \left(\frac{-7}{x-1}\right)(x+4)(x-1)$

$x(x-1) - (x+34) = -7(x+4)$

$x^2 - x - x - 34 = -7x - 28$

$+7x \quad +28 \qquad +7x \quad +28$

$x^2 + 5x - 6 = 0$

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

$x = -6, 1$

$x = -6$

2. $\frac{2x}{x^2-1} = \frac{4}{x^2+2x-3}$

$\frac{2x}{x^2-1} = \frac{4}{x^2+2x-3}$

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

$4x^2 - 4 = 2x^3 + 4x^2 - 6x$

$-4x^2 \quad +4 \qquad -4x^2 \qquad +4$

$0 = 2x^3 - 6x + 4$

WE CAN'T FACTOR THIS!

$(x+3)(x+1)(x-1)\left[\frac{2x}{(x+1)(x-1)}\right] = \left[\frac{4}{(x+3)(x-1)}\right]$

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

$2x^2 + 6x = 4x + 4$

$-4x - 4 \qquad -4x - 4$

$\frac{2x^2 + 2x - 4}{2} = \frac{0}{2}$

$x^2 + x - 2 = 0$

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

$x = -2, 1$

$x = -2$