

November 11, 2015

$$\begin{array}{r}
 x^2 + 4x + 22 \\
 x-4 \overline{) x^3 + 0x^2 + 4x + 5} \\
 \underline{-x^3 + 4x^2} \\
 0 + 4x^2 + 4x \\
 \underline{-4x^2 + 16x} \\
 0 + 22x + 5 \\
 \underline{-22x + 88} \\
 0 + 93
 \end{array}$$

$$x^2 + 4x + 22 \quad \frac{93}{x-4}$$

$$(x-4)(x^2 + 4x + 22) + 93$$

$$x^3 + 4x^2 + 22x - 4x^2 - 16x - 88 + 93$$

$$x^3 + 6x + 5 \checkmark$$

Nov 11-11:18 AM

$$p(x) = 3x^3 - 12x^2 - 9x + 1$$

$$D(x) = x - 2$$

$$\begin{array}{r}
 2 \overline{) 3 \quad -12 \quad -9 \quad 1} \\
 \underline{ 6 \quad -12 \quad -42} \\
 3 \quad -6 \quad -21 \quad -41
 \end{array}$$

$$3x^2 - 6x - 21 - \frac{41}{x-2}$$

$$(x-2)(3x^2 - 6x - 21) - 41$$

$$3x^3 - 6x^2 - 21x - 6x^2 + 12x + 42 - 41$$

$$3x^3 - 12x^2 - 9x + 1 \checkmark$$

Nov 11-11:23 AM

$$f(x) = \frac{1}{1-x}; f(f(x)) \Rightarrow x$$

$$\frac{1}{1 - \left(\frac{1}{1 - \left(\frac{1}{1-x} \right)} \right)}$$

$$\frac{1}{1 - \left(\frac{1}{1 - \frac{1-x}{1-x}} \right)} = \frac{1}{1 - \left(\frac{1-x}{x} \right)}$$

$$= \frac{1}{1 - \left(\frac{1-x}{x} \right)} = \frac{1}{1 - \left(-\frac{1-x}{x} \right)}$$

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

$$= \frac{1}{x} \cdot \frac{x}{1} = \frac{x}{1} = x$$

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$$2x^3 + 0x^2 + x - 2 \quad \frac{-\frac{3}{2}x^2}{-3x^5 + 0x^4 + 2x^3 + 0x^2 - 3x + 9}$$

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

$$\frac{2}{1} + \frac{3}{2} = \frac{4+3}{2}$$

Nov 11-11:36 AM

$$p(x) = x^2 - 11x + 24$$

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

$$\boxed{x = 8 \text{ \& } 3}$$

$$p(8) = (8)^2 - 11(8) + 24$$

$$= 64 - 88 + 24$$

$$= -24 + 24$$

$$= 0$$

$$D(x) = (x-8)$$

$$\begin{array}{r}
 8 \overline{) 1 \quad -11 \quad 24} \\
 \underline{ 8 \quad -24} \\
 1 \quad -3 \quad 0 \leftarrow p(x)
 \end{array}$$

$$p(8) = 0$$

$$(x-3)$$

Nov 11-11:43 AM

$$p(x) = x^2 - 11x + 24$$

Rational Zeros

$$\frac{\text{Factors } P}{\text{Factors } Q} = \frac{\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 8, \pm 12}{\pm 1}$$

Rational Zeros:

$$\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 8, \pm 12$$

$$+8 \text{ \& } +3$$

Nov 11-11:48 AM