

9-25-13

3rd Try

From 2-5 # 6

⑥ $x+3 \overline{) x^3 + 27}$

$$\begin{array}{r}
 x^2 - 3x + 9 \\
 \hline
 x+3 \overline{) x^3 + 0x^2 + 0x + 27} \\
 \underline{- x^3 + 3x^2} \\
 -3x^2 + 0x \\
 \underline{+ 3x^2 - 9x} \\
 9x + 27 \\
 \underline{- 9x + 27} \\
 0
 \end{array}$$

Solve by factoring

$$\begin{array}{l}
 x^2 + 8x + 12 = 0 \quad \begin{array}{l} 1, 12 \\ 2, 6 \\ 3, 4 \end{array} \\
 (x+2)(x+6) = 0 \\
 \downarrow \qquad \qquad \downarrow \\
 x+2=0 \quad \text{OR} \quad x+6=0 \\
 \underline{-2 \quad -2} \qquad \underline{-6 \quad -6} \\
 x = -2 \quad \text{OR} \quad x = -6
 \end{array}$$

Solve by factoring

$$\begin{array}{l}
 8x^2 + 17x + 2 = 0 \quad \begin{array}{l} 2 \\ 1, 2 \end{array} \\
 \sqrt{(8x+1)(x+2)} \\
 \times (8x+2)(x+1) \\
 \times (4x+1)(2x+2) \\
 \times (4x+2)(2x+1)
 \end{array}$$

$$\begin{array}{l}
 (8x+1)(x+2) = 0 \\
 8x+1=0 \quad \text{OR} \quad x+2=0 \\
 \underline{-1 \quad -1} \qquad \underline{-2 \quad -2} \\
 \frac{8x = -1}{8} \qquad \qquad \qquad \\
 x = -\frac{1}{8} \quad \text{OR} \quad x = -2
 \end{array}$$

$$\begin{array}{l}
 x(x+1)(x-3)(x+10) = 0 \\
 \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\
 x=0 \quad \underline{x+1=0} \quad \underline{x-3=0} \quad \underline{x+10=0} \\
 \qquad \underline{-1 \quad -1} \quad \underline{+3 \quad +3} \quad \underline{-10 \quad -10} \\
 x=0 \quad \text{OR} \quad x=-1 \quad \text{OR} \quad x=3 \quad \text{OR} \quad x=-10
 \end{array}$$

Quadratic Formula

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Solve $x^2 + 8x + 3 = 0$

$$a = 1$$

$$b = 8$$

$$c = 3$$

$$4ac = 12$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-8 \pm \sqrt{64 - 12}}{2}$$

$$x = \frac{-8 \pm \sqrt{52}}{2}$$

Separate into 2 parts now

$$x = \frac{-8 + \sqrt{52}}{2} \quad \text{or} \quad x = \frac{-8 - \sqrt{52}}{2}$$

$$x \approx -0.39 \quad x \approx -7.61$$

$$x = \frac{-8 \pm \sqrt{16 - 30}}{2}$$

$$= \frac{-8 \pm \sqrt{-14}}{2}$$

No solutions

9.25.13
4th Tris

From 2-5 HW

$$\begin{array}{r} \textcircled{7} \quad a-2 \sqrt{a^3+8a-21} \\ \quad \quad \quad a^2+2a+12+\frac{3}{a-2} \\ a-2 \sqrt{a^3+0a^2+8a-21} \\ \quad \quad \quad \underline{-a^3-2a^2} \quad \downarrow \\ \quad \quad \quad \quad \quad 2a^2+8a \\ \quad \quad \quad \quad \quad \underline{-2a^2-4a} \quad \downarrow \\ \quad \quad \quad \quad \quad \quad \quad 12a-21 \\ \quad \quad \quad \quad \quad \quad \quad \underline{-12a-24} \\ \quad \quad \quad \quad \quad \quad \quad \quad \quad 3 \end{array}$$

Quadratic formula

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Solve $x^2 + 5x + 2 = 0$

$$\begin{array}{l} a=1 \\ b=5 \\ c=2 \\ 4ac=8 \end{array} \quad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-5 \pm \sqrt{25 - 8}}{2}$$

$$x = \frac{-5 \pm \sqrt{17}}{2}$$

$$x = \frac{-5 + \sqrt{17}}{2} \quad \text{or} \quad x = \frac{-5 - \sqrt{17}}{2}$$

$$x \approx .44$$

$$x \approx -4.56$$

What happens if I get

$$x = \frac{-8 \pm \sqrt{-10}}{2} \leftarrow \text{No solutions}$$

Solve $x^2 + 7x + 10 = 0$

↓

$$(x+2)(x+5) = 0$$

$$\begin{array}{l} x+2=0 \\ \underline{-2 \quad -2} \\ x = -2 \end{array} \quad \text{OR} \quad \begin{array}{l} x+5=0 \\ \underline{-5 \quad -5} \\ x = -5 \end{array}$$

Solve by factoring

$$30x^2 - x - 3 = 0$$

$$\begin{array}{l} x(30x) \quad (x) \\ x(15x) \quad (2x) \\ (10x+3)(3x-1) = 0 \end{array}$$

$$\begin{array}{l} 10x+3=0 \\ \underline{-3 \quad -3} \\ \frac{10x}{10} = -\frac{3}{10} \\ x = -\frac{3}{10} \end{array} \quad \text{OR} \quad \begin{array}{l} 3x-1=0 \\ \underline{+1 \quad +1} \\ \frac{3x}{3} = \frac{1}{3} \\ x = \frac{1}{3} \end{array}$$

Solve for x:

$$x(x+2)(x-10)(x+1) = 0$$

$x=0$ or $\begin{array}{l} x+2=0 \\ \underline{-2 \quad -2} \\ x = -2 \end{array}$ $\begin{array}{l} x-10=0 \\ \underline{+10 \quad +10} \\ x = 10 \end{array}$ $\begin{array}{l} x+1=0 \\ \underline{-1 \quad -1} \\ x = -1 \end{array}$