

9-20-13
3rd Trig

Factoring Cubic Polynomials

① Factor $x^3 - 8$

$$\frac{\text{Binomial}}{(x-2)} \frac{\text{S O F A S}}{(x^2 + 2x + 4)}$$

S
Subtract
Subtract
Subtract

O
Opposite
Opposite
Opposite

F
Factor
Factor

A
Add
Add
Add

S
Subtract
Subtract
Subtract

② $x^3 + 125$

$$(x+5) \frac{\text{S O F A S}}{(x^2 - 5x + 25)}$$

③ Factor $8x^3 - 27$

$$(2x-3) \frac{\text{S O F A S}}{(4x^2 + 6x + 9)}$$

④ Factor $27x^3 + 64y^3$

$$(3x+4y) \frac{\text{S O F A S}}{(9x^2 - 12xy + 16y^2)}$$

Look at SAT question from last night

$$\textcircled{15} \quad \frac{x}{3} = \frac{x^2}{1} \quad \frac{3}{6} = \frac{4}{8}$$

$$\begin{array}{r} 3x^2 = x \\ -x \quad -x \\ \hline \end{array}$$

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

$$x(3x-1) = 0$$

$$x=0 \text{ or } 3x-1=0$$

$$\begin{array}{r} +1 \quad +1 \\ \hline 3x = 1 \\ \frac{3x}{3} = \frac{1}{3} \end{array}$$

$$x = \frac{1}{3}$$

$\textcircled{17}$ we watche video on it on Youtube channel "Double Hickam".

9-20-13
4th Trig

Factoring Cubic Polynomials

① Factor $x^3 - 27$

$$\begin{array}{c} \text{Binomial} \\ (x-3) \end{array} \begin{array}{c} \text{Trinomial} \\ \begin{array}{ccccc} S & O & F & A & S \\ x^2 & + & 3x & + & 9 \end{array} \end{array}$$

Square 1st term

Oposite sign (+, -)

F use together

Always add

Square 2nd term

② Factor $x^3 - 1000$

$$(x-10) \begin{array}{c} S \quad O \quad F \quad A \quad S \\ x^2 + 10x + 100 \end{array}$$

③ Factor $8x^3 + 27$

$$(2x+3) \begin{array}{c} S \quad O \quad F \quad A \quad S \\ 4x^2 - 6x + 9 \end{array}$$

④ Factor $8x^3 + 125y^3$

$$(2x+5y) \begin{array}{c} S \quad O \quad F \quad A \quad S \\ 4x^2 - 10xy + 25y^2 \end{array}$$

⑤ Factor $64 - 343y^3$

$$(4-7y) \begin{array}{c} S \quad O \quad F \quad A \quad S \\ 16 + 28y + 49y^2 \end{array}$$

SAT Question

15) If $\frac{x}{3} = x^2$ what is x ?

~~$\frac{4}{8} = \frac{2}{4}$~~

~~$\frac{x}{3} = \frac{x^2}{1}$~~

$$\begin{array}{r} 3x^2 = x \\ -x \quad -x \\ \hline \end{array}$$

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

$$x(3x - 1) = 0$$

$$x = 0$$

$$\begin{array}{r} 3x - 1 = 0 \\ +1 \quad +1 \\ \hline \end{array}$$

$$\frac{3x}{3} = \frac{1}{3}$$

$$x = \frac{1}{3}$$

Number 17 → Let's watch the video on Youtube