

Warm - Up

1. Factor $8x^3 + 27y^3$

$$(2x + 3y)(4x^2 - 6xy + 9y^2)$$

2. What are the solutions for

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

$$x^2 - 2x + 2$$

graph, synthetic, quadratic

$$\boxed{1 \pm i, 2}$$

3. Write a cubic function with a double root at 3 and a root at -1. It must also contain the point (0,36).

Write the function in standard form.

$$y = 4(x-3)(x-3)(x+1)$$

4. Solve:

$$x^5 + 21x = 10x^3$$

$$(x^5 - 10x^3 + 21x) = 0$$

$$\begin{array}{r} 21 \\ 7 \times 3 \\ \hline -10 \end{array}$$

$$x(x^4 - 10x^2 + 21) = 0$$

$$x = \pm 2.75, \pm 1.75, 0$$

$$x(x^2 - 7)(x^2 - 3) = 0$$

$$\boxed{x=0}$$

$$\sqrt{x^2 = 7} \\ \boxed{x = \pm\sqrt{7}}$$

$$\boxed{x = \pm\sqrt{3}}$$



