

\*\*\*Quiz\*\*\*

1. Graph:  $y = 2x^3 + 6x^2 - 8x - 24$

2. Divide:  $3x^4 - 6x^3 + 5x + 9$  by  $x - 3$

5

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Review of 6.1-6.3

What is the quotient of  $(4x^3 - 11x^2 - 9x - 5) \div (x - 4)$ ?

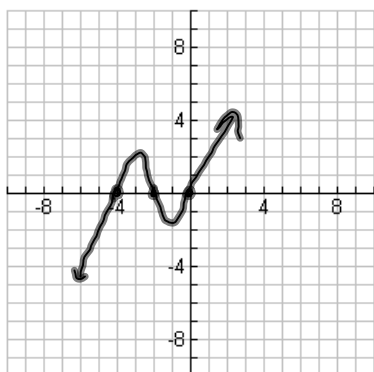
6

How many zeros does the function  $f(x) = -3x^2 + x + 2$  have?

- a. 0      b. 1      c. 2      d. 3      e. 4

What function is graphed? (write in standard form)

2



Jan 26-12:06 PM

What is the quotient of  $(4x^3 - 11x^2 - 9x - 5) \div (x - 4)$ ?

$$\begin{array}{r}
 4 \overline{) 4 \quad -11 \quad -9 \quad -5} \\
 \underline{4 \quad 16 \quad 20 \quad 44} \\
 4 \quad 5 \quad 11 \quad 39
 \end{array}$$

$$\frac{x^3}{x^2}$$

$$4x^2 + 5x + 11 + \frac{39}{x-4}$$

Mar 5-8:02 AM

$$x = -4, -2, 0$$

$$x(x+4)(x+2)$$

Mar 5-8:05 AM

## 6.4 Solving Polynomial Functions

## Solving Equations by Factoring

## Sum and Difference of Cubes

$$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$

$$a^3 - b^3 = (a-b)(a^2 + ab + b^2)$$

Factor

$$\boxed{\text{Ex1}} \quad x^3 - 8$$

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

$$\underline{\text{Ex2}} \quad 8x^3 - 1$$

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

Jan 26-12:12 PM

## Perfect Cubes

$$1, 8, 27, 64, 125, 216, 343, 512$$

Jan 26-12:23 PM

Solve

Ex 2  $27x^3 + 1 = 0$  Find all complex roots

$$(3x + 1)(9x^2 - 3x + 1) = 0$$

$$3x + 1 = 0 \quad 9x^2 - 3x + 1 = 0$$

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

$$\frac{3 \pm \sqrt{9 - 4(9)(1)}}{2(9)}$$

$$\frac{3 \pm \sqrt{-27}}{18}$$

$$\frac{3 \pm 3i\sqrt{3}}{18}$$

$$x = \frac{1 \pm i\sqrt{3}}{6}$$

Jan 26-12:18 PM

Ex 7 Solve  $x^4 + 11x^2 + 18 = 0$

$$(x^2 + 9)(x^2 + 2)$$

Jan 26-12:28 PM

HW  
Pg 330

15 - 19000

27 - 31000

42 - 44

72, 76 - 80

Jan 26-12:29 PM