Name_____ Class_____ Date_____

Chapter 5 Quiz 1

Form G

Lessons 5-1 through 5-4

Do you know HOW?

Write each polynomial function in standard form. Then classify it by degree and by number of terms.

1. $n = 4m^2 - m + 7m^4$ **2.** $f(t) = 4t + 3t^3 + 2t - 7$ **3.** $f(r) = 5r + 7 + 2r^2$

Find the zeros of each function. State the multiplicity of multiple zeros.

4. $y = (x + 2)^2(x - 5)^4$ **5.** $y = (3x + 2)^3(x - 5)^5$ **6.** $y = x^2(x + 4)^3(x - 1)$

Divide using synthetic division.

7. $(x^3 + 3x^2 - x - 3) \div (x - 1)$ **8.** $(2x^3 - 3x^2 - 18x - 8) \div (x - 4)$

Find all the imaginary solutions of each equation by factoring.

9. $x^4 + 14x^2 - 32 = 0$ **10.** $x^3 - 16x = 0$ **11.** $6x^3 - 2x^2 + 4x = 0$

Do you UNDERSTAND?

12. What is $P(-4)$ given that $P(x) = 2x^4 - 3x^3 + 5x^2 - 1$?

13. Open-Ended Write the equation of a polynomial function that has zeros at −3 and 2.

14. The product of three integers is 90. The second number is twice the first number. The third number is two more than the first number. What are the three numbers?

15. Reasoning The volume of a box is $x^3 + 4x^2 + 4x$. Explain how you know the box is not a cube.

16. Error Analysis For the polynomial function $y = \frac{1}{3}x^2 + x + 6$, your friend says the end behavior of the graph is down and up. What mistake did your friend make?