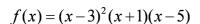
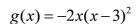
## Quiz Review 2.3 to 2.5

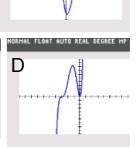
- 1. For each of the following be able to...
  - a. write the roots & identify any multiplicities NORMAL FLOAT AUTO REAL DEGREE HP
  - b. determine the degree
  - c. determine if the leading coefficient is +/-
  - d. match the graph







Α



$$h(x) = x^2(x+2)^3$$

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

2. Use synthetic division to find a quotient and remainder when f(x) is divided by d(x).

$$f(x) = x^3 - 5x^2 + 3x - 2$$
$$d(x) = x + 1$$

3. Use long division to find a quotient and remainder when f(x) is divided by d(x).

$$f(x) = x^4 - 3x^3 + 6x^2 - 3x + 5$$
  $d(x) = x^2 + 1$ 

4. Given  $f(x) = 3x^3 + 4x^2 - 5x - 2$ , determine which of the following are factors of f(x).

c. 
$$3x + 1$$

5. Use the Rational Zeros Theorem to write list of potential rational zeros.

$$f(x) = 3x^4 - 2x^3 - 4x^2 - 5x - 9$$

6. Given f(-3) = 0, find all remaining zeros of  $f(x) = x^3 + x^2 - 8x - 6$ 

7. Given 3*i* is a zero of  $f(x) = 3x^4 - 14x^3 + 22x^2 - 126x - 45$ , find all remaining zeros.

8. Determine the end behavior of the following functions

$$f(x) = -17x^4 - 3x^3 + 6x^2 + 10x + 4$$

$$g(x) = 2x^5 + 3x^4 - 10x^3 + 4$$

9. Determine a polynomial of minimum degree with real coefficients that has roots -3/4, 2 and 2 + 3i and a leading coefficient of 8. Leave it as a linear factorization c function.