

## SECTION 4.5: SOLVING A POLYNOMIAL FUNCTION

**Homework:** \_\_\_\_\_

### **Learning Targets:**

- 4c. Factor polynomial functions by graphing, grouping, and quadratic techniques.
- 4d. Solve polynomial functions by graphing and factoring.

Multiplicity: A polynomial function has multiplicity when it has \_\_\_\_\_ factors

$$y = (x - 3)(x - 2)(x - 2)$$

$$y = -x(x + 5)(x + 1)^2$$

Solving by Factoring: Move everything over so that the equation equals \_\_\_\_\_. Factor the polynomial \_\_\_\_\_ and set each factor equal to \_\_\_\_\_.

$$2x^4 + 4x^3 - 16x = 8x^2$$

Finding the zeros and factors from a graphing calculator: Plug the function into \_\_\_\_\_. Find the zeros (where the graph \_\_\_\_\_ the x-axis). Plug those zeros into \_\_\_\_\_, remembering to do the \_\_\_\_\_.

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