

Name: \_\_\_\_\_

Date: \_\_\_\_\_

CC ALGEBRA 2

TROICI

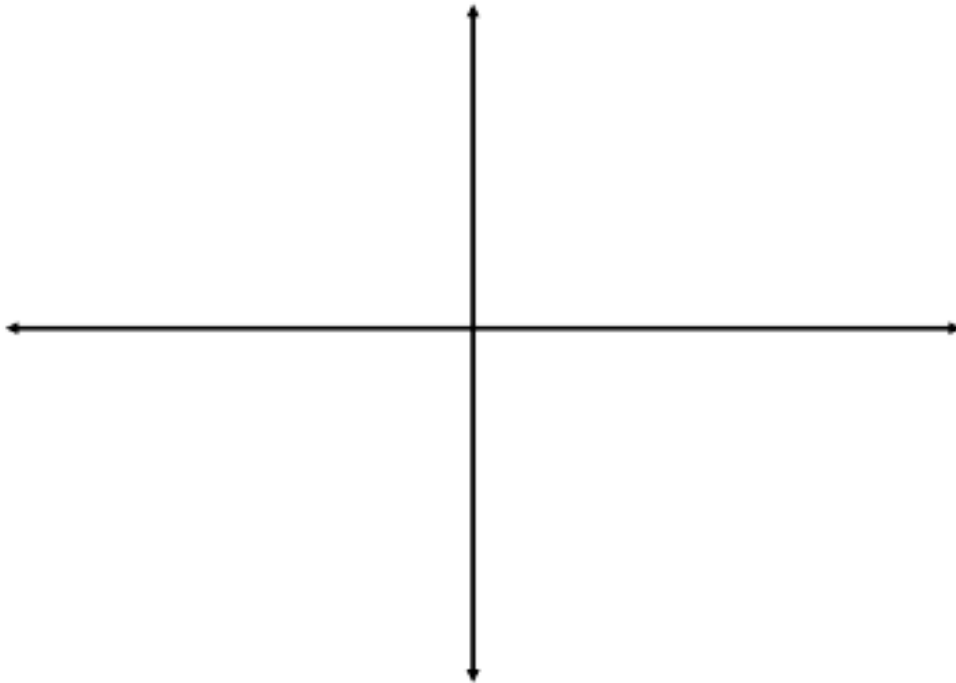
**LESSON #7: REVIEW POLYNOMIAL FUNCTIONS**

*Do Now: 15 MINUTE QUIZ*

Try to answer without a Calculator!

$$\text{Given: } f(x) = -x(x + 5)(x - 1)^2$$

- a) State the degree of the function.
- b) State the roots of the function and their multiplicity.
- c) State the y-intercept of the function.
- d) Describe the end behavior of the function.
- e) Sketch the function on the axes below. Be sure to label all important points.



- f) Is the function even, odd, or neither? Explain your answer *graphically*.
- g) Now justify your answer to part f *algebraically*.

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

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**LAB #7**

1) For the function  $0 = x^3 + 3x^2 - 9x - 27$

a) State the degree of the function.

b) State the y-intercept of the function.

c) Describe the end behavior of the function. Explain how you know.

d) Find the roots of the function algebraically and state their multiplicity.

$$0 = x^3 + 3x^2 - 9x - 27$$

2) The function  $j(x) = 2x^3 - 3x^2 - 9x + 10$  has three real zeroes. If one of the zeroes is  $x = -2$ , determine the remaining zeroes.

3) Given the graph of the function, answer the following questions:

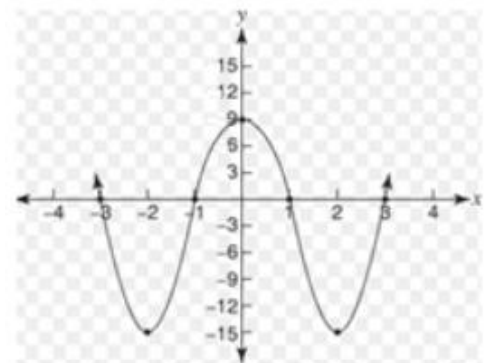
a) What is the y-intercept?

b) What are the zeros?

c) Is this function even, odd, or neither? Explain.

d) Is the leading coefficient positive or negative? Explain.

e) Is the degree of the function even or odd? Explain.



4) Find the zeros of the following equation. Use any (or all!) of the 3 different methods: Factor, Completing the Square, or Quadratic Formula

$$2x^2 - 9x + 4 = 0$$

5) Factor completely:

a)  $x^3 - 64$

b)  $27y^3 + 343$

6) Determine **algebraically** if the following functions are even, odd, or neither:

a)  $f(x) = 4x^2 + 1$

b)  $g(x) = 5x^3 + 4x$

7) Is the function graphed even, odd or neither? Explain.

