

# **Math Virtual Learning**

# Algebra 2A Polynomial Parent Functions

May 11, 2020



#### Lesson: Sketching Polynomial Parent Functions

#### Learning Target:

LT C2 I can identify key features (zeros, multiplicity, end behavior, y-intercept, local minimums and maximums, turning points, transformations).

#### **Objective:**

Students will be able to identify parts of a graph.

# Warm Up

1. 
$$g(x) = x^2 - 1$$

Give the name of the parent function and describe the transformation represented

2. 
$$f(x) = 2|x-1|$$

3. h(x) = 
$$\sqrt{x-2}$$

4. 
$$g(x) = x^3 + 3$$

## Warm Up Answers

Give the name of the parent function and describe the transformation represented.

1. 
$$g(x) = x^2 - 1$$
Name: quadratic  
Transformation: Shifted down 1 whit2.  $f(x) = 2|x-1|$ Name: absolute value  
Transformation: Stretched by factor of 2,  
Transformation: Shifted right 1 whit3.  $h(x) = \sqrt{x-2}$ Name: gquare root  
Transformation: Shifted right 2 whits4.  $g(x) = x^3 + 3$ Name: cubic  
Transformation: Shifted up 3 whits

# Lesson for the day

For today, we will be reviewing x- and y-intercepts Then we will be looking at the end behavior of a graph.

Please watch the following two videos.

Identifying x- and y- intercepts

How to describe end behavior of functions

#### Practice

For the following four graphs label the x-intercept, the y-intercept, and the end behavior.







x-int. (3,0) y-int. (0,-1) end behavior f(x) +> + 00 as X +> + 00 f(x) +> - 00 as x -> -00

Practice Answer Key (On this and the next 3 slides)



$$x - int. (0, 0) (4, 0)$$

$$y - int. (0, 0)$$

$$end behavior$$

$$f(x) - p - \infty \quad as \quad x - p + \infty$$

$$f(x) - p - \infty \quad as \quad x - p + \infty$$

3.

4.  

$$\begin{array}{c} \begin{array}{c} x - int. (-3, c)(-1, c)(c, c) \\ (1, c) (3, c) \\ y - int. (c, c) \\ \end{array} \\ \begin{array}{c} y - int. (c, c) \\ end \ behavior \\ f(x) - p + cc \\ \end{array} \\ \begin{array}{c} x - y + cc \\ \end{array} \\ \begin{array}{c} x - y + cc \\ \end{array} \\ \begin{array}{c} x - y + cc \\ \end{array} \\ \begin{array}{c} x - y - cc \\ \end{array} \\ \end{array}$$
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