

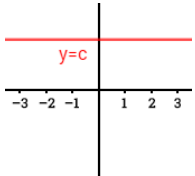
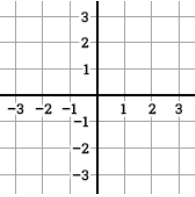
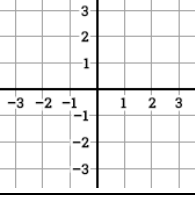
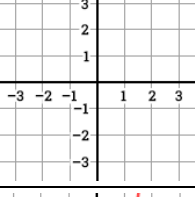
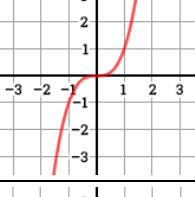
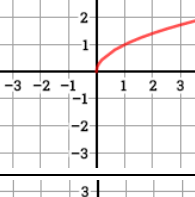
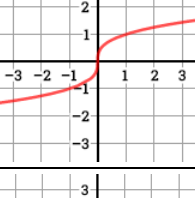
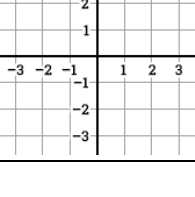
Name:

Period:

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Math Lab: Compare & Contrast Parent Graphs

The **parent graph** is the most basic graph of a function. We've already studied the parent graphs of constant, linear, absolute value, quadratic, and rational functions. Today we will add two radical functions to the family: square root and cube root. And we will also consider the parent graph of another polynomial function: the cubic. First, complete all information except the description. Then, answer the questions on the back. Last, use the information on the back to write as complete a description as possible for each parent graph.

Equation:	Graph:	Type of function:	Domain:	Range:	Description:
$y = c$					
$y = x$					
$y = x $					
$y = x^2$					
$y = x^3$					
$y = \sqrt{x}$					
$y = \sqrt[3]{x}$					
$y = \frac{1}{x}$					

1] All parent graphs pass through the **origin** except...

2] All parent graphs pass through the point **(1,1)** except...

3] All parent graphs have a **domain** of all real numbers except...

4] All parent graphs are **increasing** from left to right except...

5] The only parent graphs with intervals of **increasing** AND **decreasing** are...

6] The only parent graph that is neither **increasing** NOR **decreasing** is...

7] The only parent graphs that include values in **Quadrant II** are...

8] The only parent graph that includes values in **Quadrant IV** is...

9] The only **discontinuous** parent graph is...

Hint: You cannot trace the entire curve without lifting your pencil.

10] The only parent graphs with **y-axis symmetry** are...

Hint: If you fold the graph along the y-axis, you get a mirror image on both sides.

11] The only parent graphs with **origin symmetry** are...

Hint: If you rotate the graph 180 degrees, you get the same graph you started with.

12] The only parent graphs with **symmetry over the line $y=x$** are...

Hint: If you fold the graph along the diagonal line $y = x$, you get a mirror image on both sides.

13] The only parent graph with **no symmetry** is...

14] The parent graphs with a **range** of all real numbers are...

15] The parent graphs with a **range** of non-negative numbers are...

16] The only parent graph whose **range** is defined by what it doesn't have rather than what it does is...

17] The parent graphs for which a **reflection in the x-axis** makes the same graph as a **reflection in the y-axis** are...

18] The parent graphs of the **polynomial** functions include...

19] The parent graphs of the **radical** functions include...

20] These two pairs of parent graphs are **inverses** of each other...

Hint: The graphs of inverses have **symmetry over the line $y = x$**