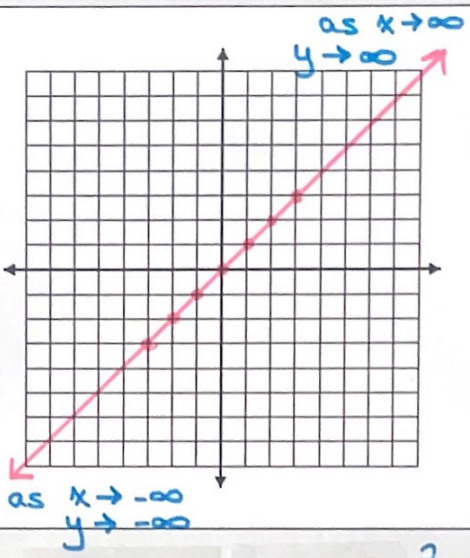
Name: _____ Period: _____

INTRODUCTION TO *Parent Functions*

LINEAR PARENT FUNCTION $y = x$

X	Y
-3	-3
-2	-2
-1	-1
0	0
1	1
2	2
3	3



DOMAIN	$(-\infty, \infty)$
RANGE	$(-\infty, \infty)$

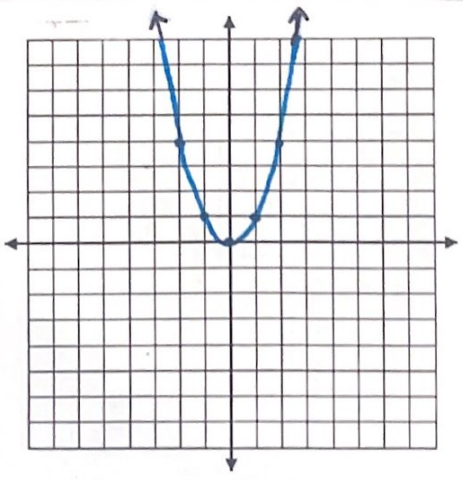
END BEHAVIOR

As $x \to \infty$, $f(x) \to \infty$

As $x \to -\infty$, $f(x) \to -\infty$

QUADRATIC PARENT FUNCTION $y = x^2$

X	Y
-3	9
-2	4
-1	1
0	0
1	1
2	4
3	9



DOMAIN	$(-\infty, \infty)$
RANGE	$[0, \infty)$

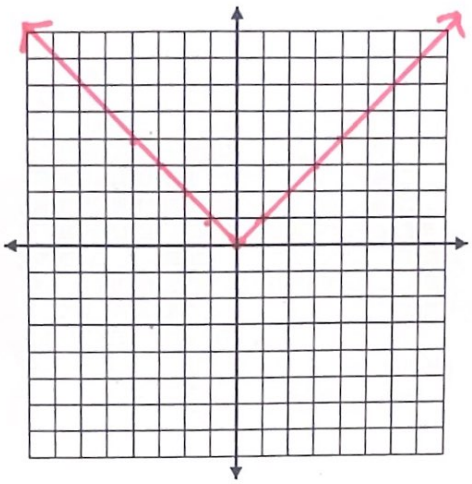
END BEHAVIOR

As $x \to \infty$, $f(x) \to \infty$

As $x \to -\infty$, $f(x) \to \infty$

ABSOLUTE VALUE PARENT FUNCTION $y=|x|$

X	Y
-3	3
-2	2
-1	1
0	0
1	1
2	2
3	3



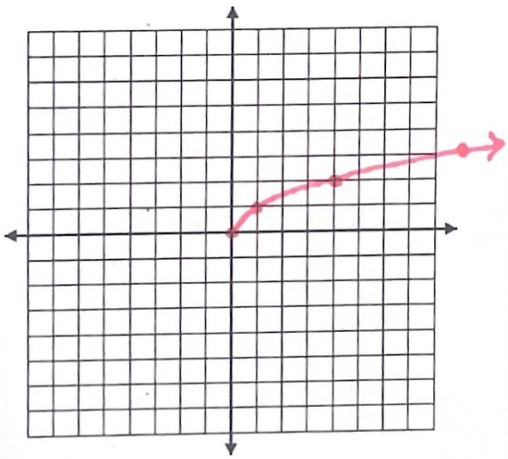
DOMAIN	$(-\infty, \infty)$
RANGE	$[0, \infty)$

END BEHAVIOR

As $x \to \infty$, $f(x) \to \infty$
As $x \to -\infty$, $f(x) \to \infty$

SQUARE ROOT PARENT FUNCTION $y=\sqrt{x}$

X	Y
0	0
1	1
4	2
9	3
16	4
25	5
36	6



DOMAIN	$[0, \infty)$
RANGE	$[0, \infty)$

END BEHAVIOR

As $x \to \infty$, $f(x) \to \infty$
As $x \to 0$, $f(x) \to 0$

THESE ARE THE FOUR PARENT FUNCTIONS WE WILL BE EXPLORING THIS UNIT. IT IS VERY IMPORTANT TO BE FAMILIAR WITH THEIR GENERAL SHAPE AND KEY FEATURES.

IN THE COMING LESSONS, WE WILL BE USING TRANSFORMATIONS TO GRAPH NEW FUNCTIONS USING THESE PARENT FUNCTIONS.