
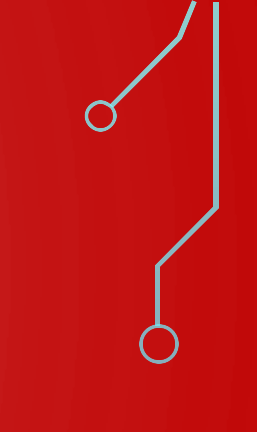
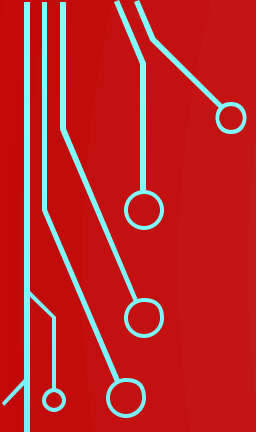


BOARD NOTES

3 SEPTEMBER 2019





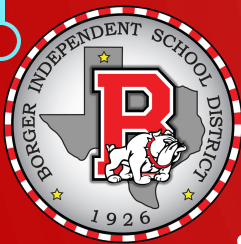
2A.2 (A) graph the functions $f(x) = x^2$, $f(x) = \sqrt{x} = \sqrt[2]{x}$, $f(x) = 1/x$, $f(x) = \sqrt[3]{x}$, $f(x) = x^3$, $f(x) = |x|$, $f(x) = b^x$, $f(x) = \log_b x$ where b is 2, 10, and e , and, when applicable, analyze the key attributes such as domain, range, intercepts, symmetries, asymptotic behavior, and maximum and minimum given an interval;

2A.2 (D) use the composition of two functions, including the necessary restrictions on the domain, to determine if the functions are inverses of each other;

2A.7 (I) write the domain and range of a function in interval notation, inequalities, and set notation.



We will be able to analyze the key attributes such as reflections across the x -axis, y -axis, origin, and if the function is even, odd or neither.



WHAT WE NEED:

- TI – 84
- Definition of:
 - Even
 - Odd

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVING THE

- Domain
- Range
- Intercepts (if any)
- Intervals of: Increasing / Decreasing / Constant
- Reflections
- Even / Odd / Neither



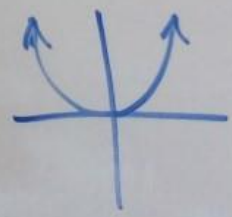
x	y
-9	-6
-5	8
-2	8
0	4
2	0
4	-4
8	0
10	2

* Y-AXIS
 $(x, y) \rightarrow (-x, y)$ $y = f(-x)$

x	y
9	-6
5	8
2	8
0	4
-2	0
-4	-4
-8	0
-10	2

EVEN

$$f(x) = x^2$$



$$f(-x) = f(x)$$



1.1 (E)
create and use
representations to
organize,
record, and
communicate
mathematical ideas

1.1 (F)
analyze
mathematical
relationships to
connect
and communicate
mathematical ideas

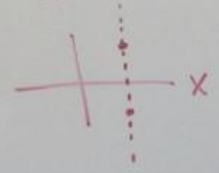
1.1 (G)
display, explain,
and justify
mathematical ideas
and arguments
using precise
mathematical
language in
written or oral
communication



X-AXIS $(x, y) \rightarrow (x, -y)$
NF $y = -f(x)$

x	y
-9	6
-5	-8
-2	-8
0	-4
2	0
4	4
8	0
10	-2

REFLECTED
ABOUT X-AXIS
IS IT A FUNC?

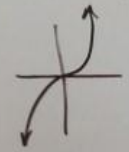


ORIGINS *
 $(x, y) \rightarrow (-x, -y)$

x	y
9	6
5	-8
2	-8
0	-4
-2	0
-4	4
-8	0
-10	-2

ODD

$$f(x) = x^3$$



$$f(-x) = -f(x)$$

$y = x$ $f^{-1}(x)$
 $(x, y) \rightarrow (y, x)$

x	y
-6	-9
8	-5
8	-2
4	0
0	2
-4	4
0	8
2	10

$$f(x) = f(-x) \quad \text{P}$$

EVEN

$$f(x) = x^2$$

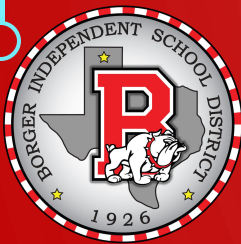
x	y
-3	9
-2	4
-1	1
0	0
1	1
2	4
3	9

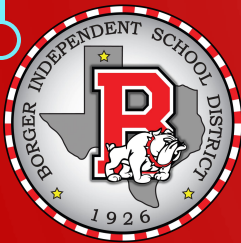
$$f(-x) = (-x)^2$$

x	y
-3	$(-(-3))^2 = 9$
-2	$(-(-2))^2 = 4$
-1	$(-(-1))^2 = 1$
0	$(-0)^2 = 0$
1	$(-1)^2 = 1$
2	4
3	9

$$-f(x) = -x^2$$

x	y
-3	$-(-3)^2 = -9$
-2	$-(-2)^2 = -4$
-1	-1
0	0
1	-1
2	-4
3	-9





$$f(x) = x^3 - 4$$

NEITHER

$$\begin{aligned} f(-x) &= (-x)^3 - 4 \\ &= -x^3 - 4 \end{aligned}$$

$$\neq f(x) \quad \text{NOT EVEN}$$

$$\begin{aligned} -f(x) &= -(x^3 - 4) \\ &= -x^3 + 4 \end{aligned}$$

$$\neq f(-x) \quad \text{NOT ODD}$$