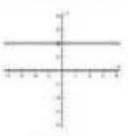
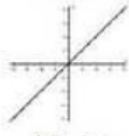
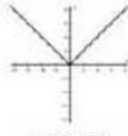
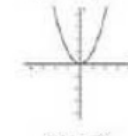
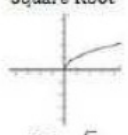
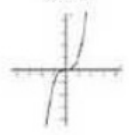
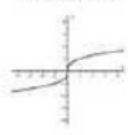
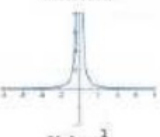
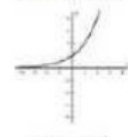
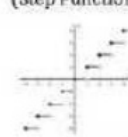
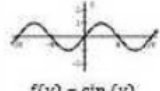
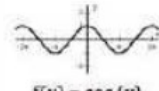
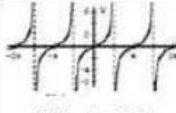


Function Families:

Parent Functions Book (Honors)

Constant  $f(x) = c$	Linear  $f(x) = x$	Absolute Value  $f(x) = x$	Quadratic  $f(x) = x^2$
Square Root  $f(x) = \sqrt{x}$	Cubic  $f(x) = x^3$	Cube Root  $f(x) = \sqrt[3]{x}$	Reciprocal/Inverse/ Rational  $f(x) = \frac{1}{x}$
Rational  $f(x) = \frac{1}{x^2}$	Logarithmic  $f(x) = \log(x)$	Exponential  $f(x) = e^x$	Greatest Integer (Step Function)  $f(x) = \lfloor x \rfloor$
Trigonometric Functions →	 $f(x) = \sin(x)$	 $f(x) = \cos(x)$	 $f(x) = \tan(x)$

Name: _____

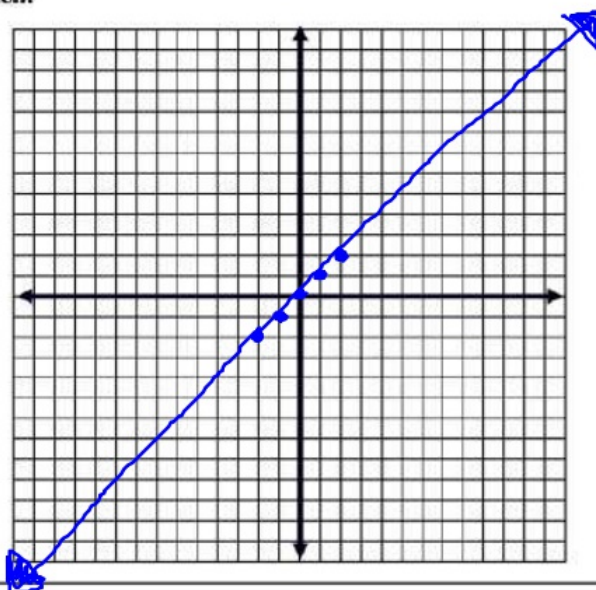
Linear

$f(x) = x$

Table of Values

choose two positive,
two negative and zero
for values of x

x	y
-2	-2
-1	-1
0	0
1	1
2	2

Sketch:

$f(x) = x$

Domain
(interval)

$(-\infty, +\infty)$

Range
(interval)

$(-\infty, +\infty)$

Increasing
(interval)

$(-\infty, +\infty)$

Decreasing
(interval)

None

Intercepts

$x\text{-int: } (0, 0)$

$y\text{-int: } (0, 0)$

Asymptotes

None

End behavior

$L: x \rightarrow -\infty \quad y \rightarrow -\infty$

$R: x \rightarrow +\infty \quad y \rightarrow +\infty$

Positive

$(0, +\infty)$

Negative

$(-\infty, 0)$

Max/Min

none

Symmetry

odd

Additional info:

A straight line

Absolute Value

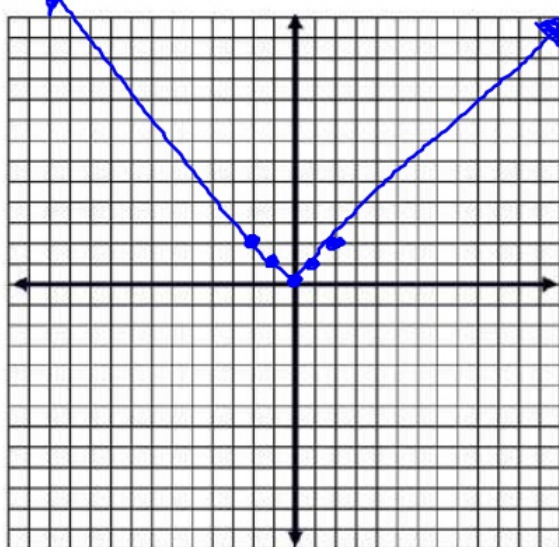
$f(x) = |x|$

Table of Values

choose two positive,
two negative and zero
for values of x

x	y
-2	2
-1	1
0	0
1	1
2	2

Sketch:



$f(x) = |x|$

Domain
(interval)

$(-\infty, +\infty)$

Range
(interval)

$[0, +\infty)$

Increasing
(interval)

$(0, +\infty)$

Decreasing
(interval)

$(-\infty, 0)$

Intercepts

 $(0, 0)$ is an x and y -int

Asymptotes

none

End behavior

$L: x \rightarrow -\infty, y \rightarrow +\infty$

$R: x \rightarrow +\infty, y \rightarrow +\infty$

Positive

$(-\infty, +\infty)$

Negative

none

Max/Min

 $(0, 0)$ - min

Symmetry

even

Additional info:

V-shaped

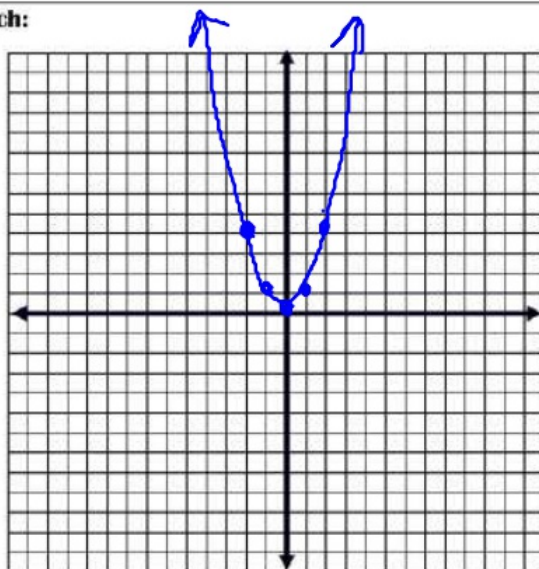
**Polynomial
(Quadratic)**
 $f(x) = x^2$

Table of Values

choose two positive,
two negative and zero
for values of x

x	y
-2	4
-1	1
0	0
1	1
2	4

Sketch:



$f(x) = x^2$

Domain
(interval)

Range
(interval)

Increasing
(interval)

Decreasing
(interval)

Intercepts

Asymptotes

none

End behavior

Positive

Negative

Max/Min

Symmetry

Additional info: