



Review

Notes Pac...

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Set Notation

Domain: $\{x | \dots, x \in \mathbb{R}\}$ ↖ x is all real numbers

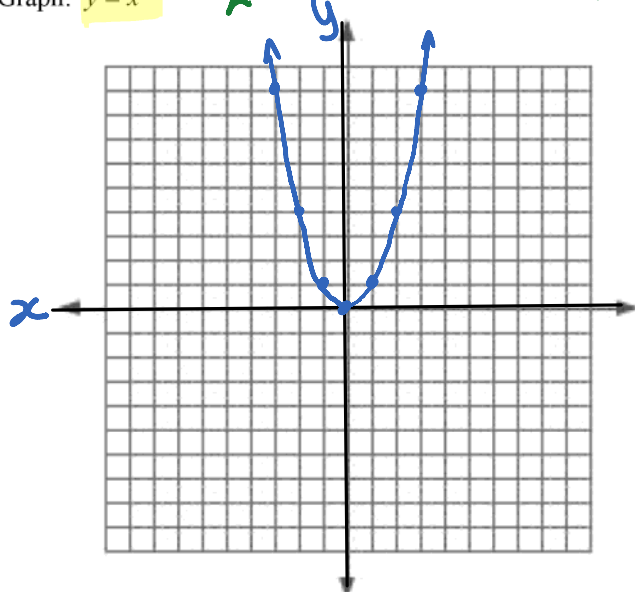
Range: $\{y | \dots, y \in \mathbb{R}\}$

Graphing:

- • Label the x- and y- axis
- Make a table of values
- Plot the point on your grid
- Draw a line or smooth curve
- Domain: the set of x values valid in the equation
- Range: the set of y values valid in the equation

When graphing, start with a table of values. Look at restrictions and use your graphing calc to verify.

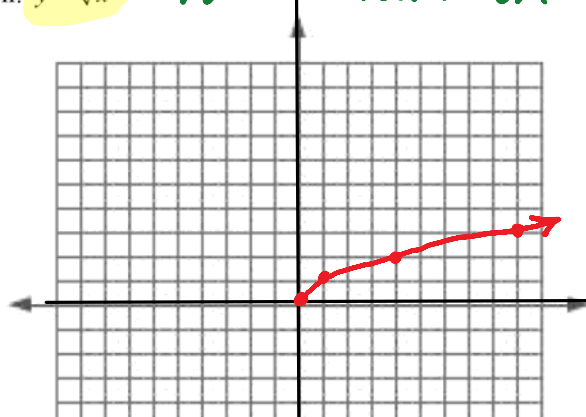
1. Graph: $y = x^2$ quadratic function



x	y	coordinates
-3	9	→ (-3, 9)
-2	4	→ (-2, 4)
-1	1	
0	0	
1	1	
2	4	
3	9	

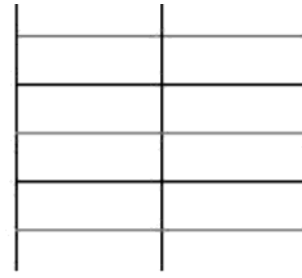
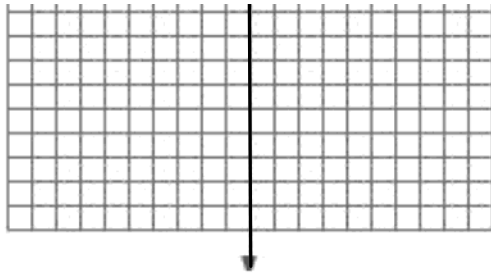
$\{x | x \in \mathbb{R}\}$
 $\{y | y \geq 0, y \in \mathbb{R}\}$

2. Graph: $y = \sqrt{x}$ radical function



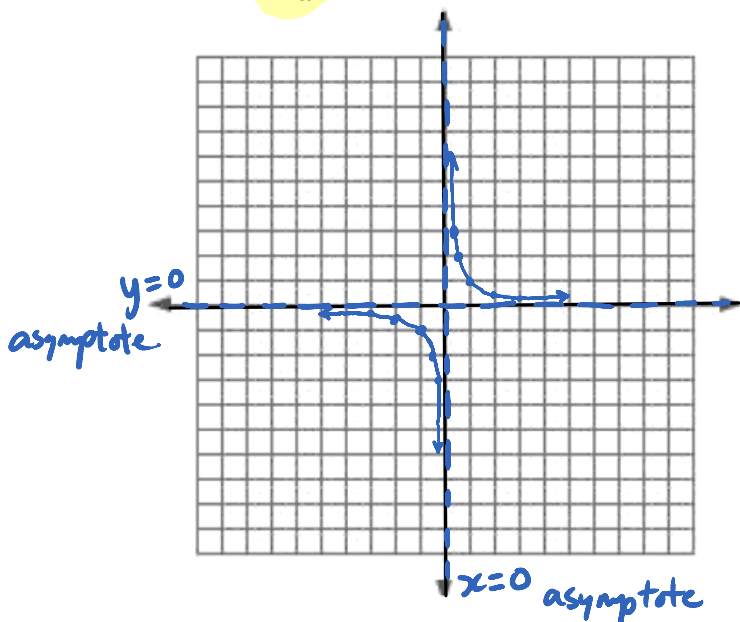
x	y
0	0
1	1
4	2
9	3

$\{x | x \geq 0, x \in \mathbb{R}\}$
 $\{y | y \geq 0, y \in \mathbb{R}\}$



2 3 1 0 7 7 0

3. Graph: $y = \frac{1}{x}$ rational function



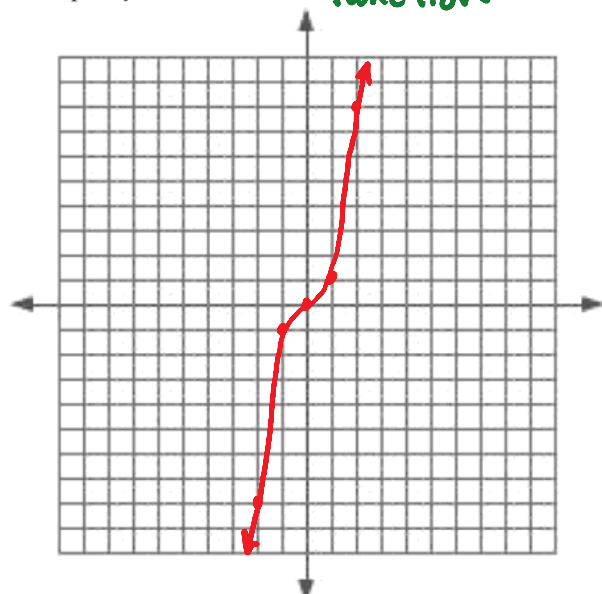
x	y
-3	$-\frac{1}{3}$
-2	$-\frac{1}{2}$
-1	-1
$-\frac{1}{2}$	-2
$-\frac{1}{3}$	-3
0	\emptyset
$\frac{1}{3}$	3
$\frac{1}{2}$	2
1	1
2	$\frac{1}{2}$
3	$\frac{1}{3}$

$y = \frac{1}{-3}$
 $y = \frac{1}{-2}$
 $y = \frac{1}{-1}$
 $y = \frac{1}{-\frac{1}{2}} = 1 \times -2$
 $y = \frac{1}{-\frac{1}{3}} = 1 \times -3$
 $y = \frac{1}{0} = \emptyset$

$\{x \mid x \neq 0, x \in \mathbb{R}\}$

$\{y \mid y \neq 0, y \in \mathbb{R}\}$

4. Graph: $y = x^3$ cubic function

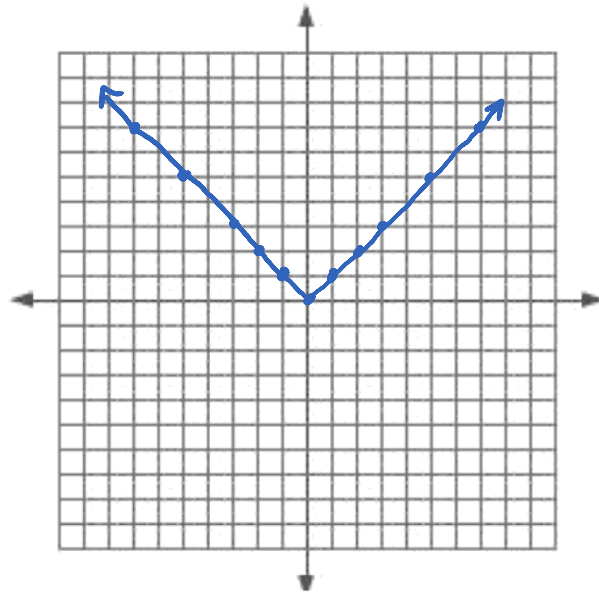


x	y
-2	-8
-1	-1
0	0
1	1
2	8

$\{x \mid x \in \mathbb{R}\}$

$\{y \mid y \in \mathbb{R}\}$

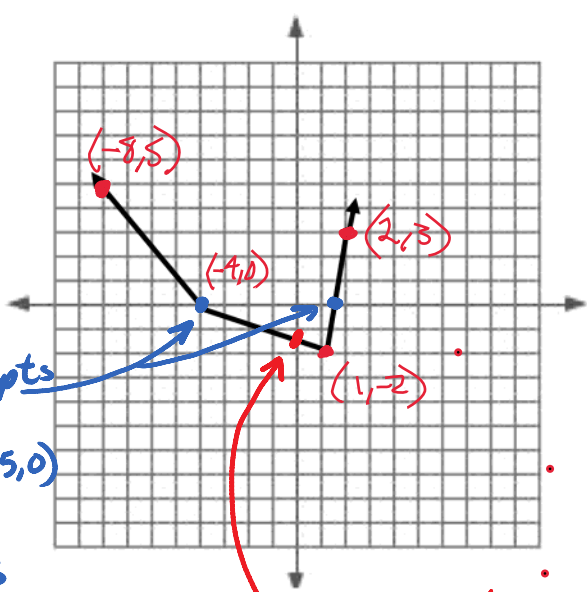
5. Graph: $y = |x|$ absolute value function



x	y
-7	7
-5	5
-3	3
-2	2
-1	1
0	0
1	1
2	2
3	3
5	5
7	7

$\{x | x \in \mathbb{R}\}$
 $\{y | y \geq 0, y \in \mathbb{R}\}$

6. This is the graph of $y = f(x)$. List 4 or 5 points on this graph in the table of values.

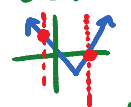


x-intercepts
 $= -4, 1.5$
 or $(-4, 0) + (1.5, 0)$
 a.k.a.
 ↳ roots
 ↳ zeros
 ↳ solutions

y-intercept
 $= -1.5$
 or $(0, -1.5)$

$y = f(x)$ represents a function which can represent any graph & is a relation between $x + y$

a function has one output (y-value) for one input (x-value) → vertical line test determines a function or not



not a function is more than one y-value for one x-value.

