

March 

Bellringer:

Get a piece of graph paper. Make a table and graph the following functions.

1. $y = x^2$

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

parabola

2. $y = \sqrt{x}$

x	y
0	0
1	1
4	2
9	3
16	4

3. $y = |x|$

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

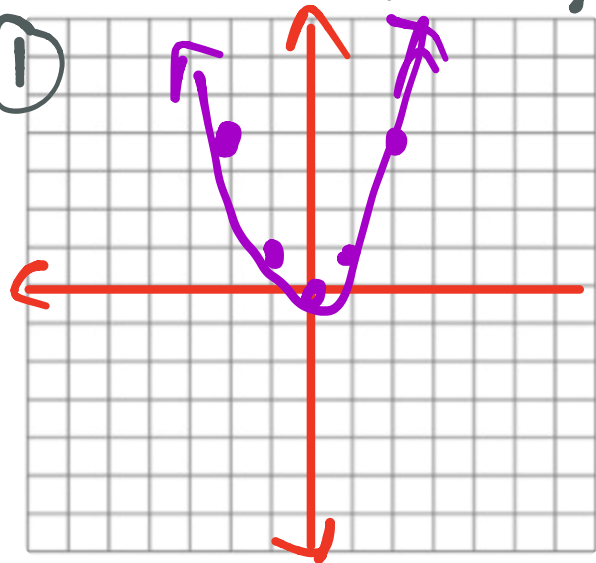
4. $y = x$

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

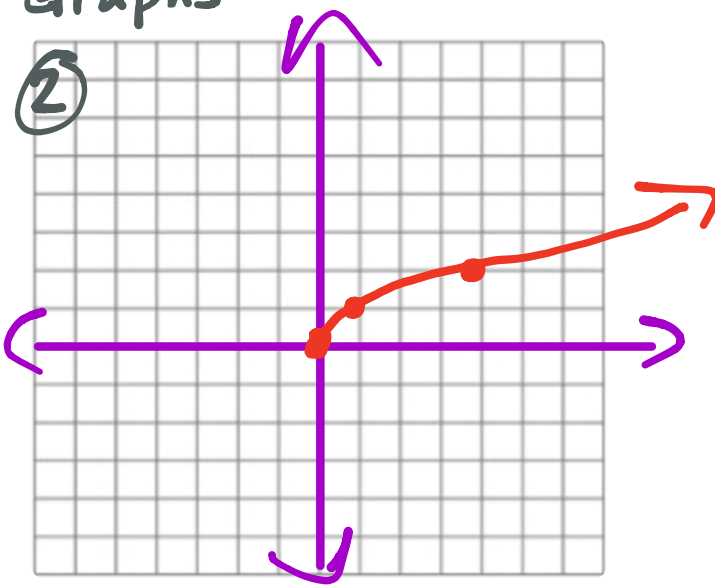
linear

Bellringer Graphs

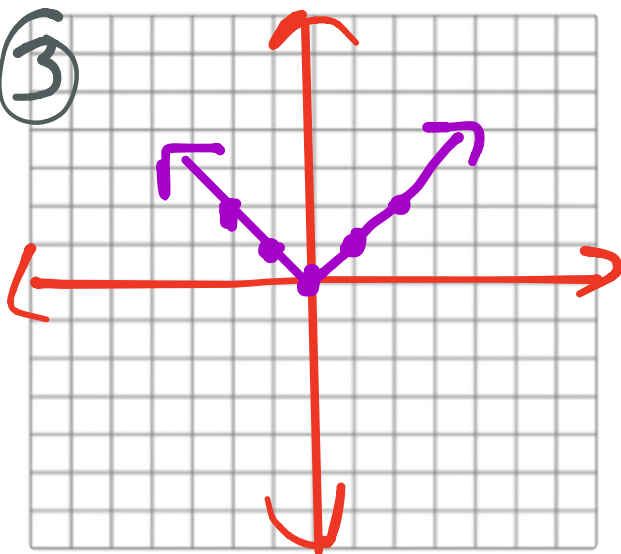
①



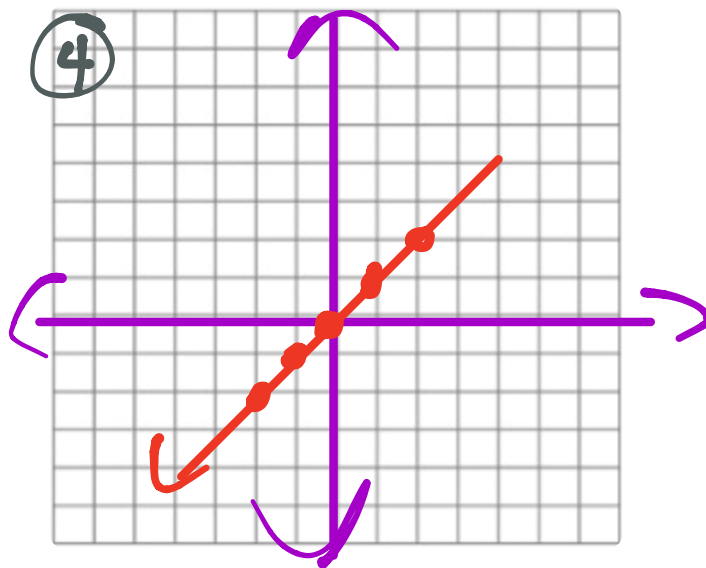
②



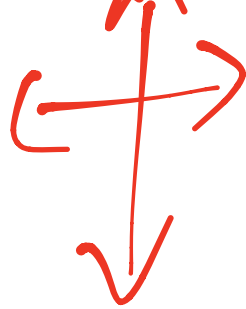
③



④



Learning Target: You can find the solutions to quadratic functions by graphing. (Zeros of the function)



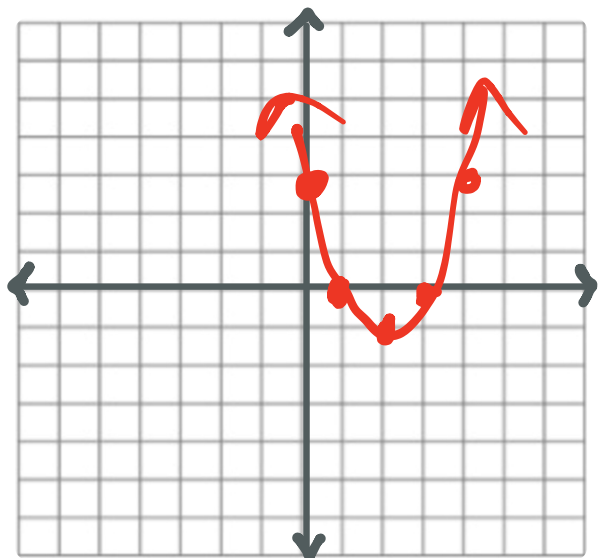
$$y = x^2 - 4x + 3$$

Solve by graphing. MAKE A TABLE.

$$x^2 - 4x + 3 = 0$$

axis: $x = 2$

vertex: $(2, -1)$



x	$x^2 - 4x + 3$	y
0		3
1	$1 - 4 + 3$	0
2		-1
3		0
4		3

Solutions
 $1, 3$

$$x^2 - 6x = -9$$

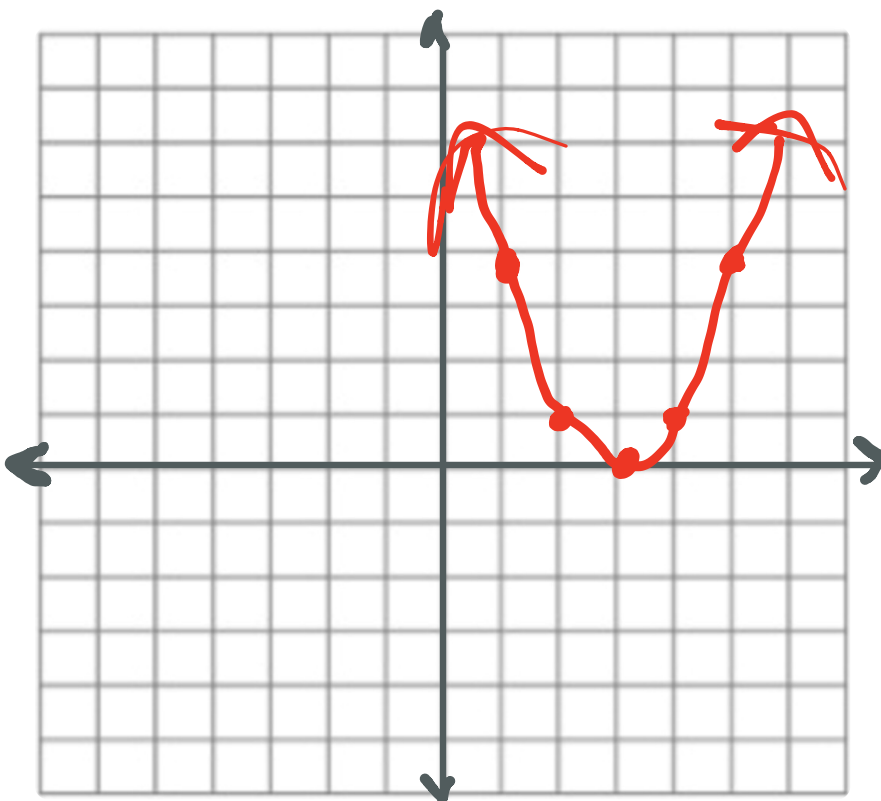
$$x^2 - 6x + 9 = 0$$

axis: $x = 3$

vertex: \circ

x	$x^2 - 6x + 9$	y
1		4
2		1
3		0
4		1
5		4

sol
 $x = 3$



$$x^2 + 3x - 10 = 0$$

axis: $x = -\frac{3}{2}$

vertex:

$$\begin{aligned} & \left(-\frac{3}{2}\right)^2 + 3\left(-\frac{3}{2}\right) - 10 \\ & = -\frac{49}{4} \end{aligned}$$

x	$x^2 + 3x - 10$	y
-5		0
-4		-6
-3		-10
-2	4 - 6 - 10	-12
$-\frac{3}{2}$		$-\frac{49}{4}$
-1		-12
0		-10
1	1 + 3 - 10	-6
2	4 + 6 - 10	0



~~sol.~~
 $-5, 2$

$$x^2 - 5x + 12 = 0$$

axis $x = \frac{5}{2}$
vertex
 $(\frac{5}{2}, \frac{23}{4})$

x	$x^2 - 5x + 12$	y
1		8
2		6
$\frac{5}{2}$		$\frac{23}{4}$
3		6
4		8



NO
Solution

$$-x^2 - 5x + 1 = 0$$

axis $x = -\frac{5}{2}$

vertex

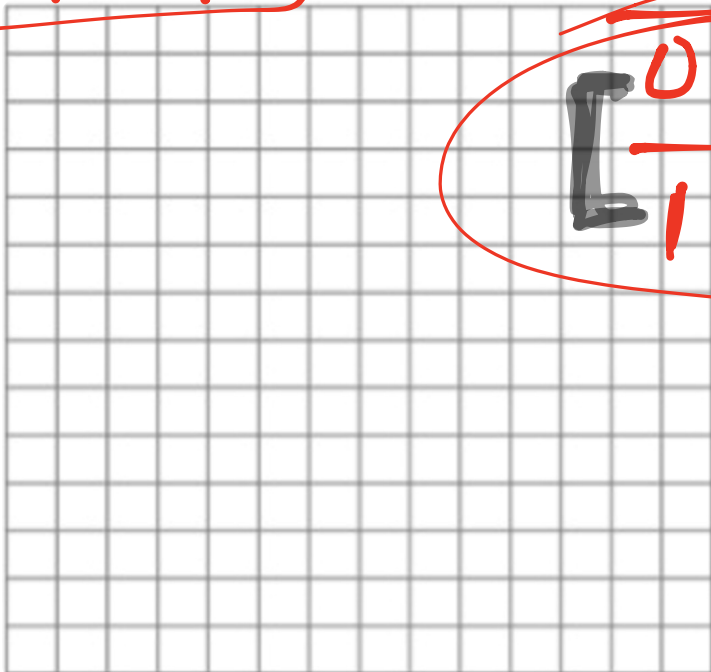
$$\left(-\frac{5}{2}, \frac{29}{4}\right)$$

Solution

$$-6 < x < -5$$

$$0 < x < 1$$

x	$-x^2 - 5x + 1$	y
-6		5
-5		1
-4		5
-3		7
-2		29
-1		4
0		7
1		5
0		1
1		-5



Assignment:

p558

2-8 $\epsilon \rightarrow$ GRAPH

10, 12 \rightarrow DO NOT GRAPH
just find the solutions

P. 549

2) DARN

$$\begin{array}{r} R \quad y \geq -2 \\ \hline x \quad | \quad y \end{array}$$

④ DARN

$$\begin{array}{r} R \quad y \geq -8 \\ \hline x \quad | \quad y \end{array}$$

$$\begin{array}{c|c} -3 & 2 \\ -2 & -1 \\ -1 & -2 \\ 0 & -1 \\ 1 & 2 \end{array}$$

$$\begin{array}{c|c} -1 & 4 \\ 0 & -5 \\ 1 & -8 \\ 2 & -5 \\ 3 & 4 \end{array}$$

6) vertex
 $(-2, -3)$

axis $x = -2$

y-int 1

8) Vertex
 $(0, 5)$

axis $x = 0$

y-int 5

10) vertex
 $(1, 2)$

axis $x = 1$

y-int 1

12) $(1, 5)$ $x = 1$
 y-int 9

14) a) max b) 3

c) DARN

$R \quad y \leq 3$

16) @ Max

b) 2

0 DAV
 $Ry \leq 2$

18)

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

20

x	y
-1	8
0	-1
1	-4
2	-1
3	8

$$2) y = x^2 + 2x - 1$$

axis

$$x = \frac{-b}{2a}$$

$$x = \frac{-2}{2}$$

$$x = -1$$

vertex

$$y = x^2 + 2x - 1$$

$$y = 1 - 2 - 1$$

$$y = -2$$

$$(-1, -2)$$

14)

$$y = -x^2 - 2x + 2$$

axis

$$x = -\frac{b}{2a}$$

$2a$

$$x = \frac{2}{2(-1)} = -1$$

$$x = -1$$

vertex

$$y = -1(1) - 2(-1) + 2$$

$$y = -1 + 2 + 2$$

$$y = 3$$

max

DRAW

$$R \quad y \leq 3$$