

Name: _____

Date: _____

Linear vs. Nonlinear Relationships

Directions: Select two colors for your key. Color all of the linear relationships one color and all the nonlinear relationships a different color.

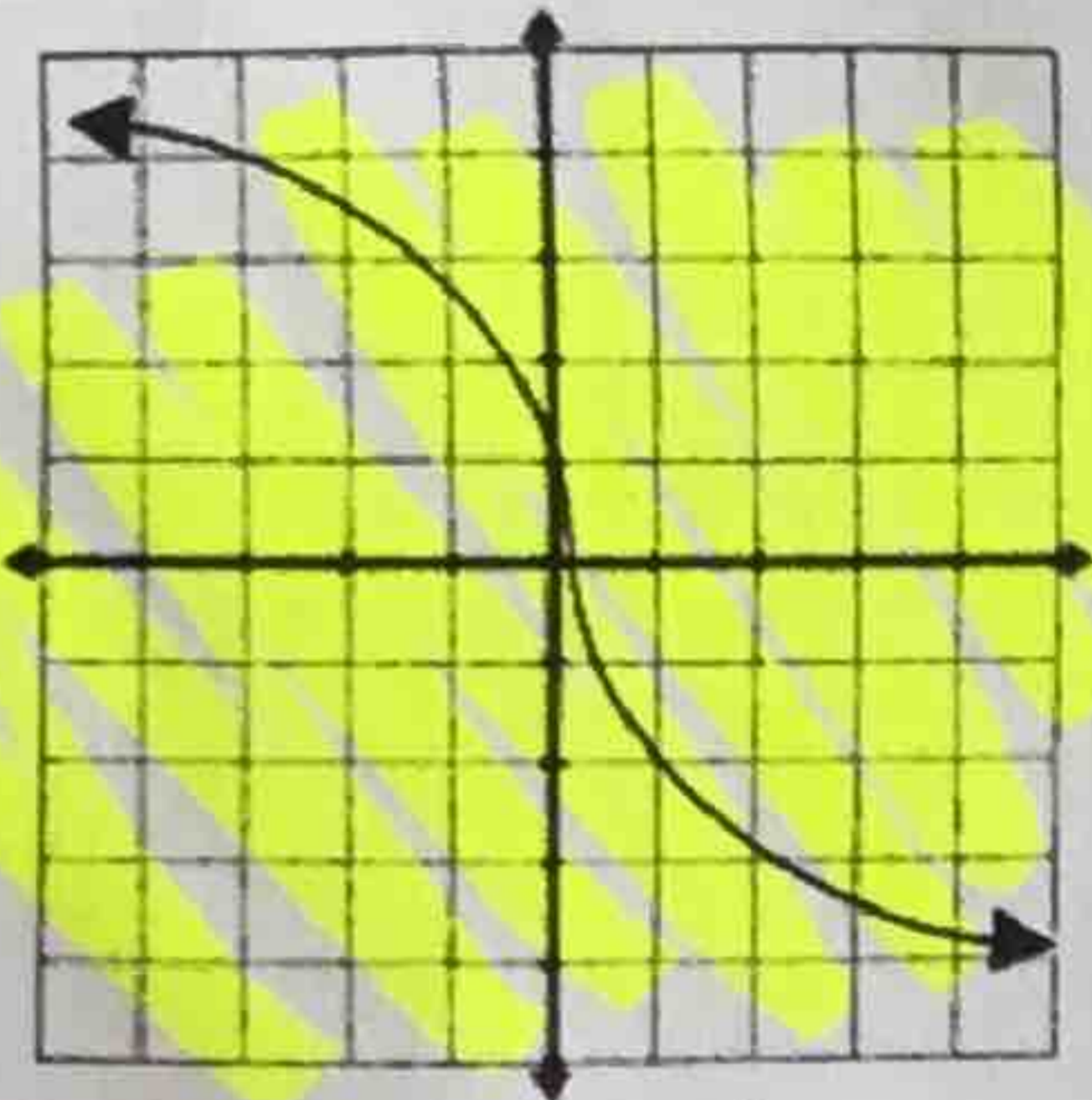
Key:



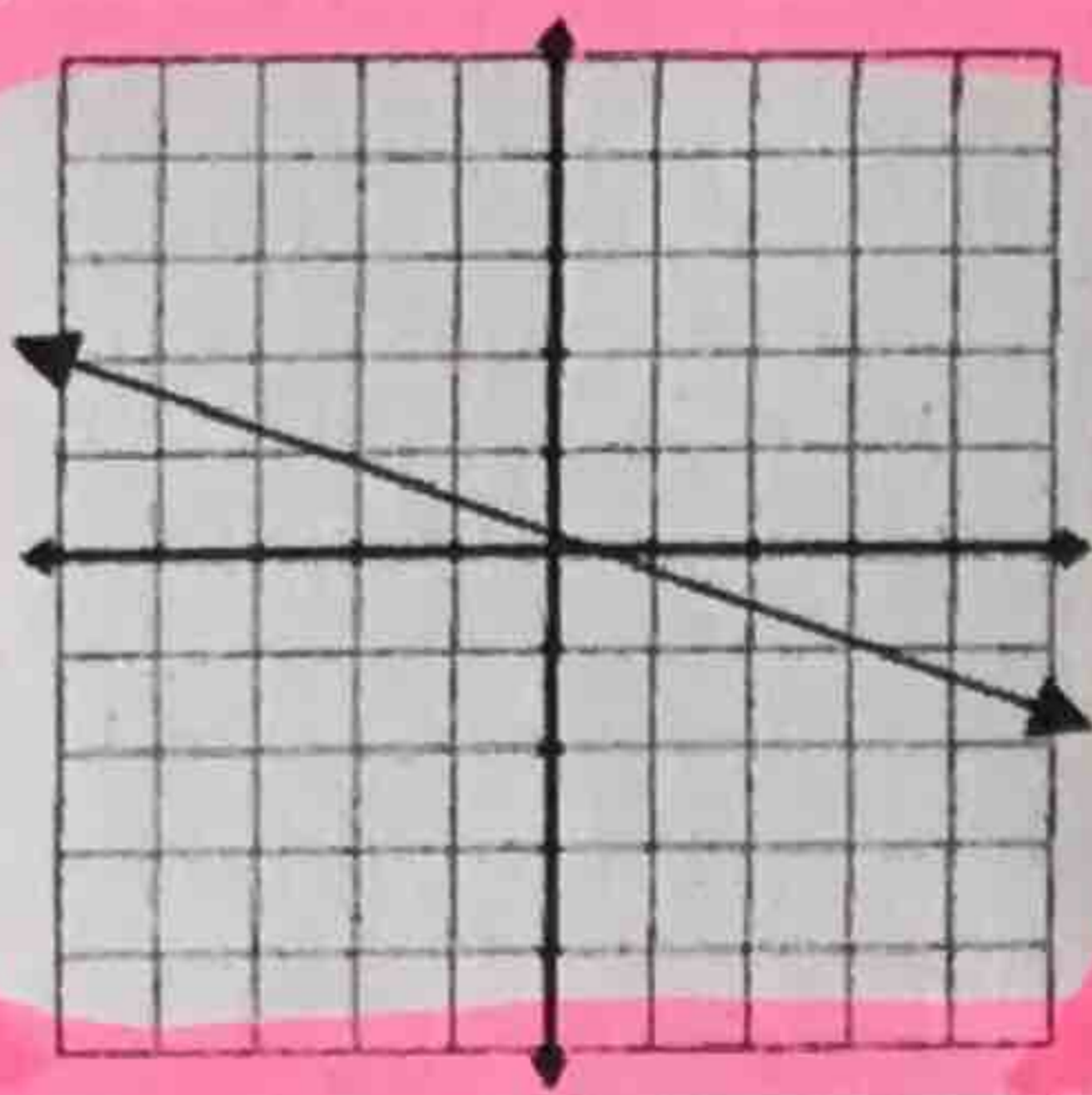
= linear



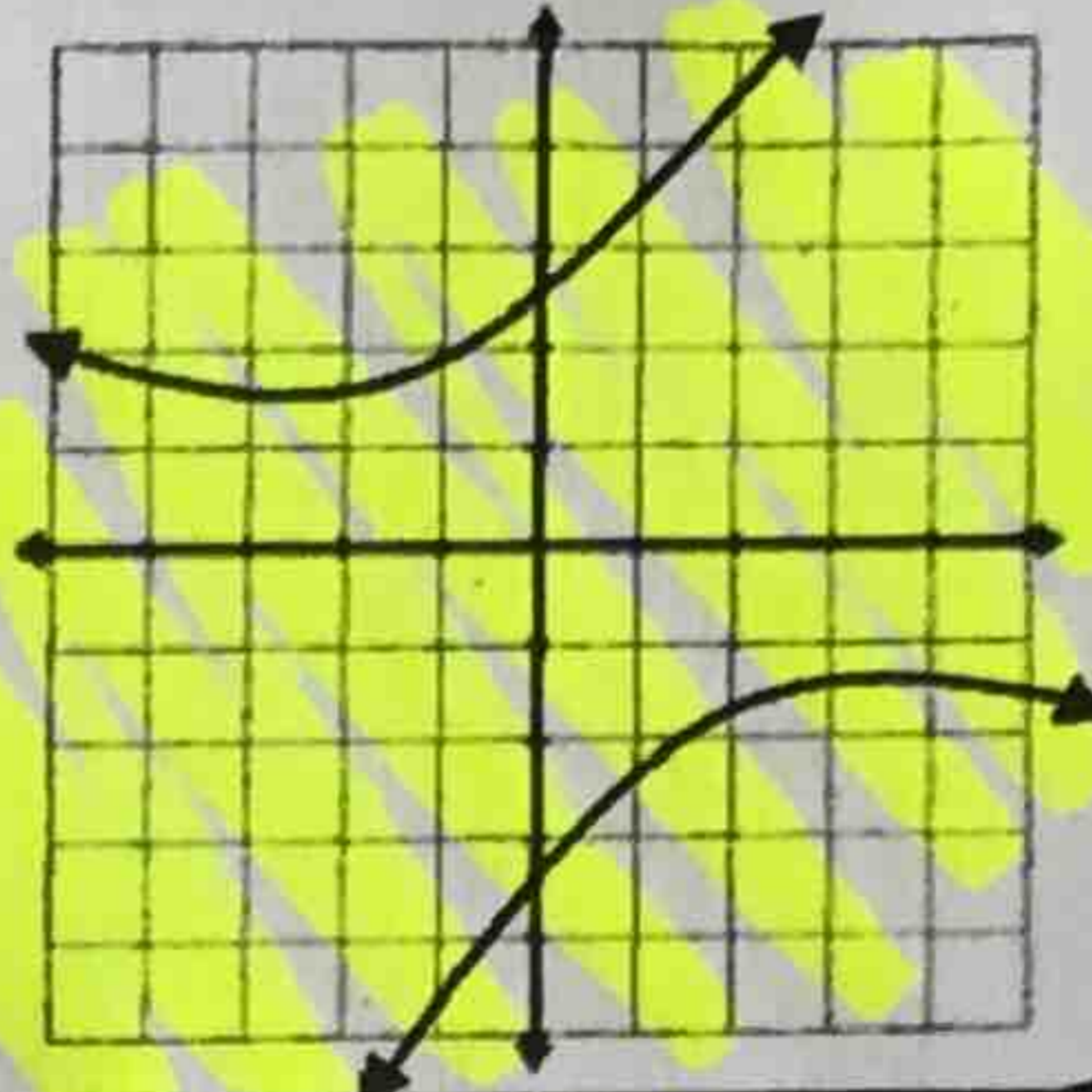
= nonlinear



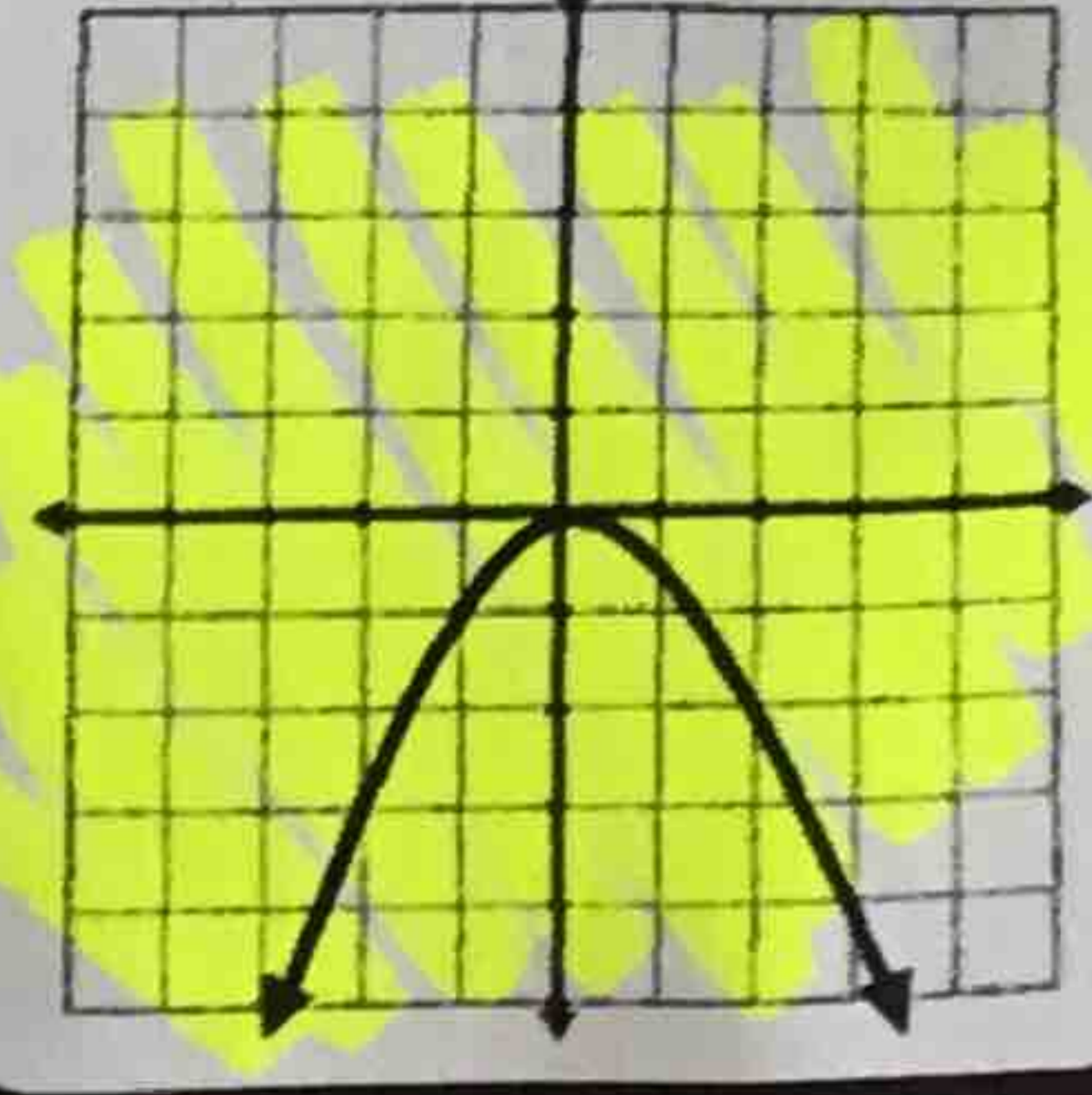
$$y = 2x + 20$$



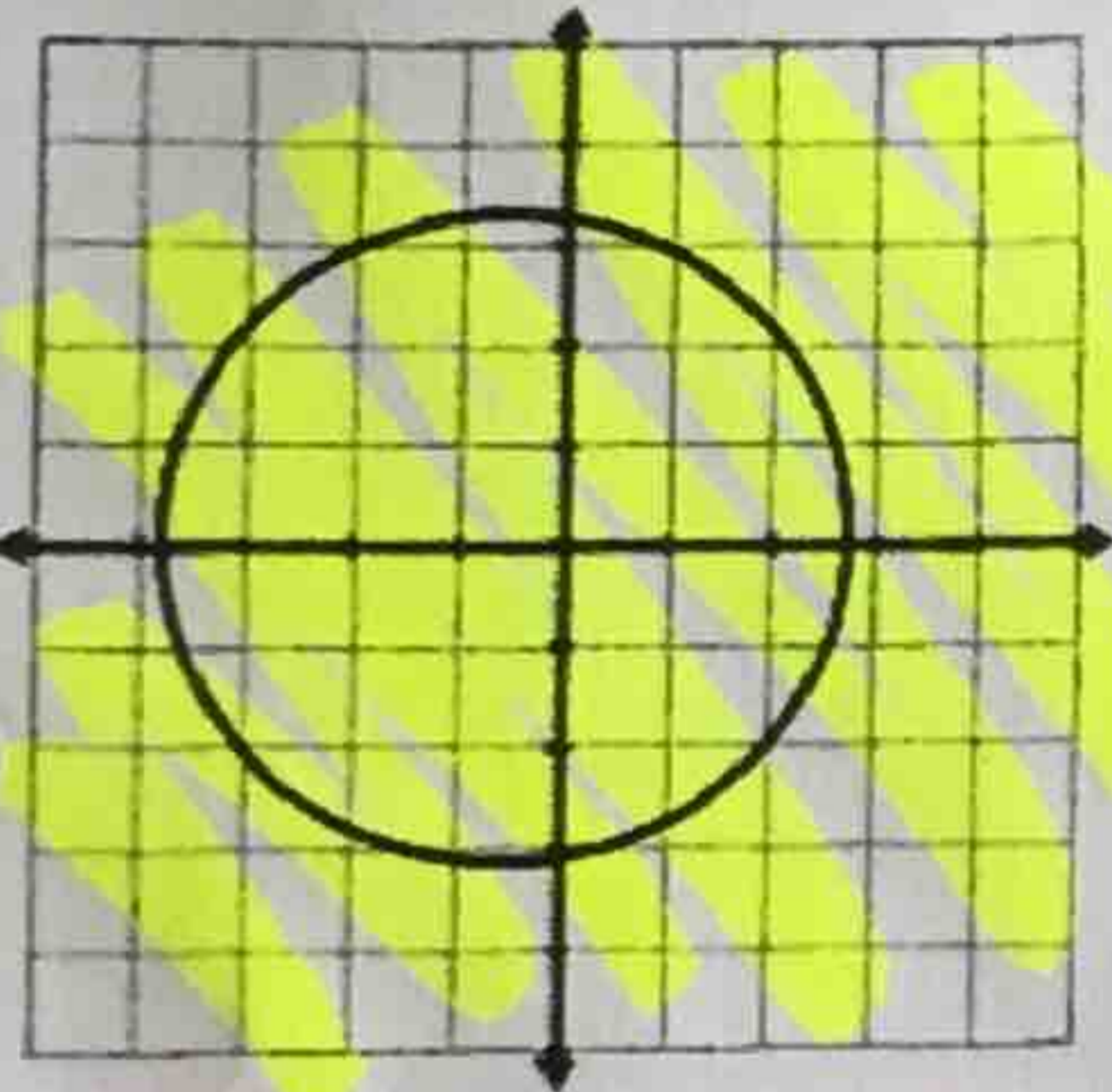
$$y = x^2 - 9$$



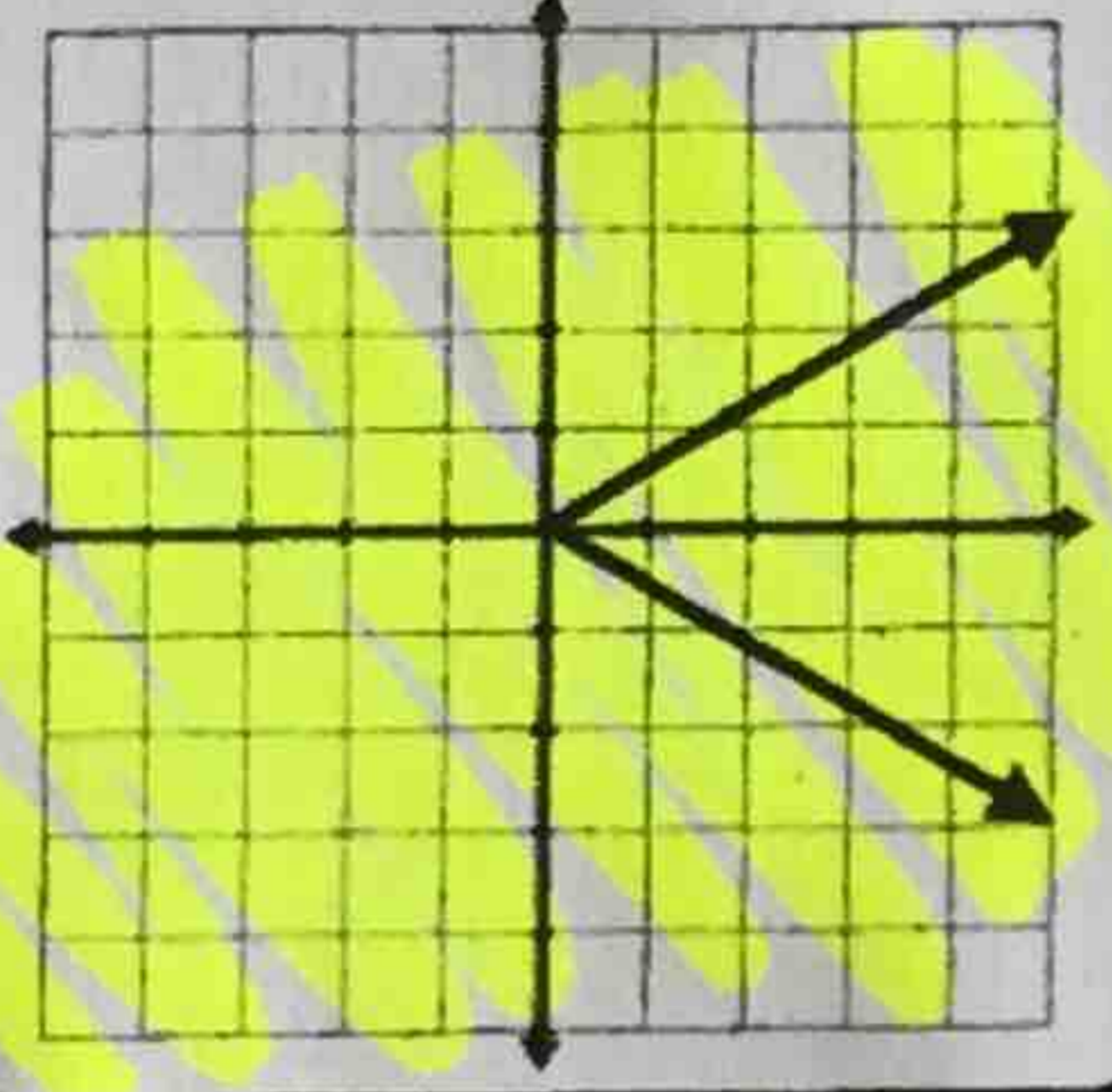
$$y = \frac{4}{x} + 1$$



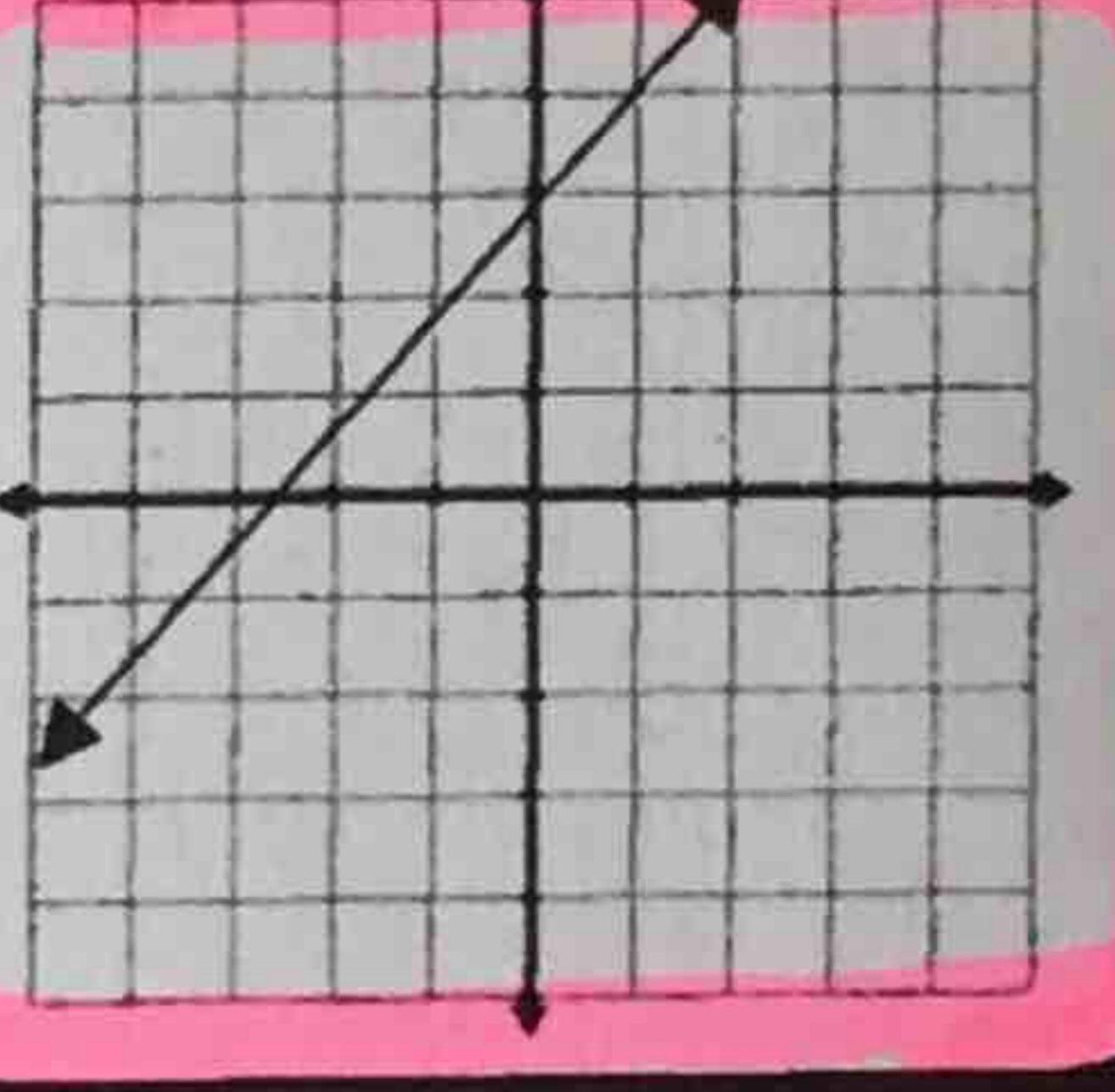
$$y = x$$



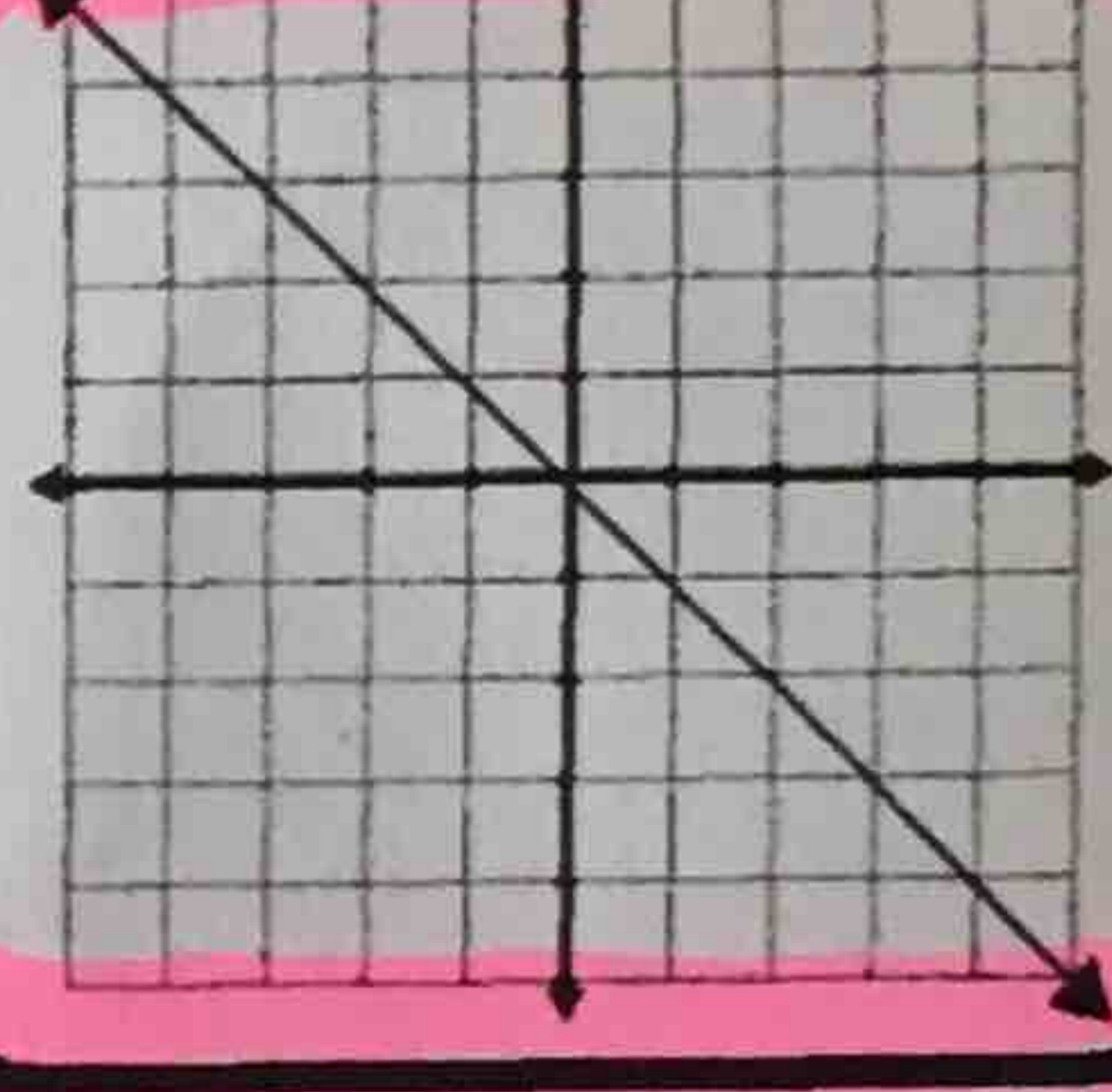
$$y = 0.42x$$



$$y = \sqrt{x} + 9$$



$$y = -5x - 1$$



$$y = 6x + 10$$

x	y
1	5
2	10
3	15
4	20

x	y
-5	2
-4	9
-3	16
-2	23

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

x	y
0	1.1
1	1.2
2	1.3
3	1.4

$$y = x^3 + 6$$

$$y = -|x|$$

$$y = \frac{2}{x} - 3$$

$$y = 7x - 8$$

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

x	y
4	3
6	7
8	11
10	15

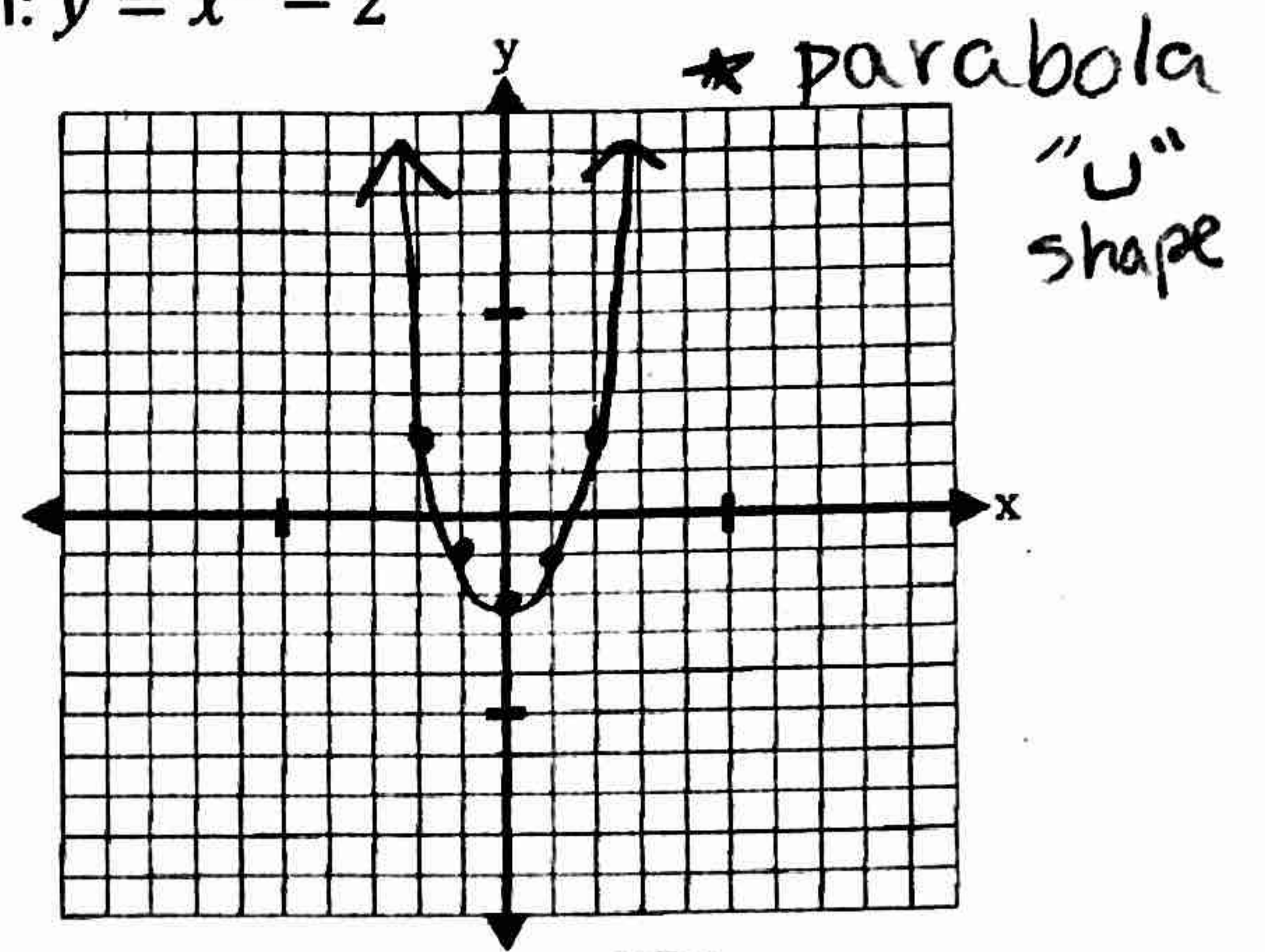
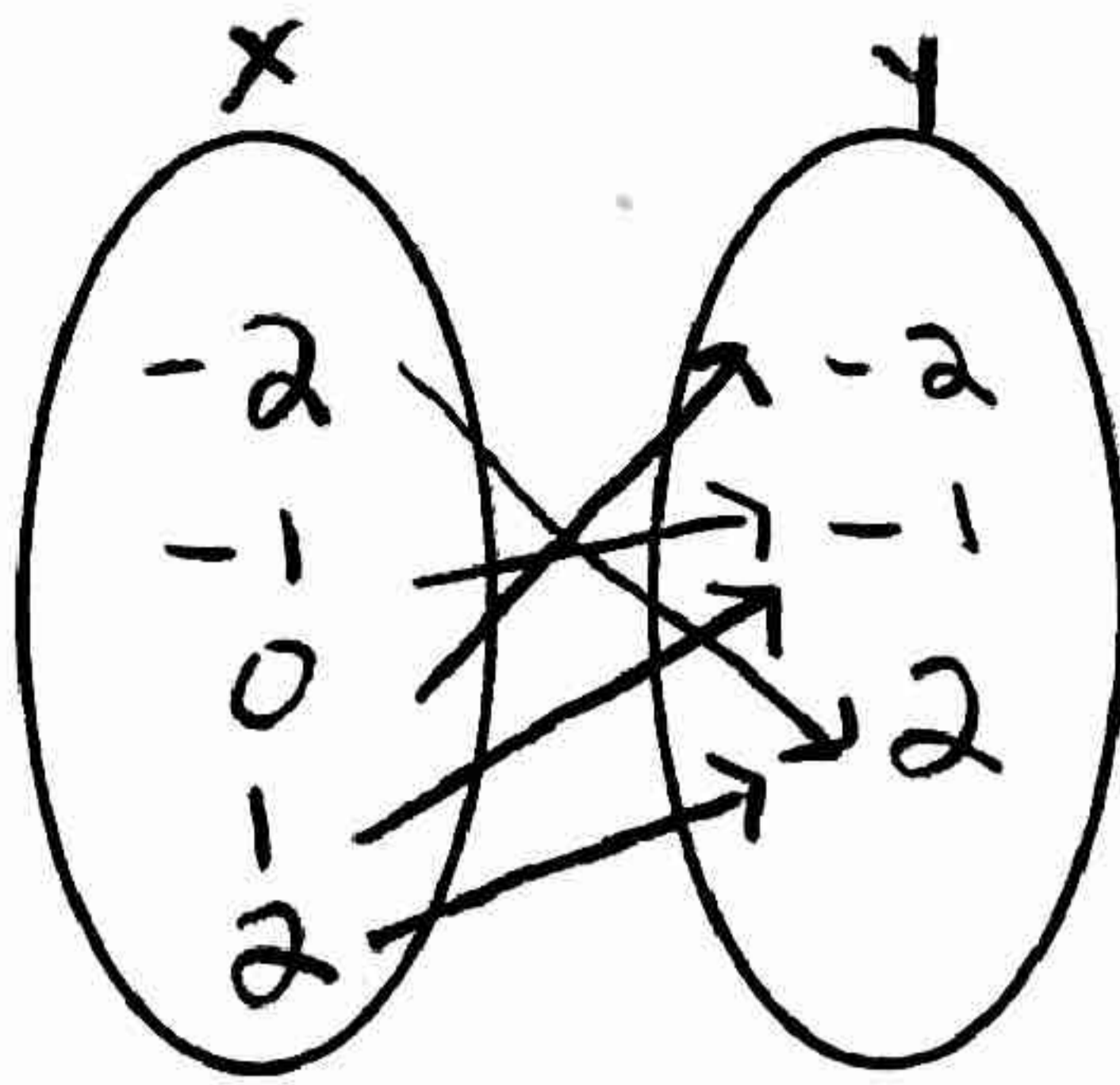
x	y
1	1
2	4
3	9
4	16

x	y
0	4
1	8
2	16
3	32

Graphing Nonlinear Functions

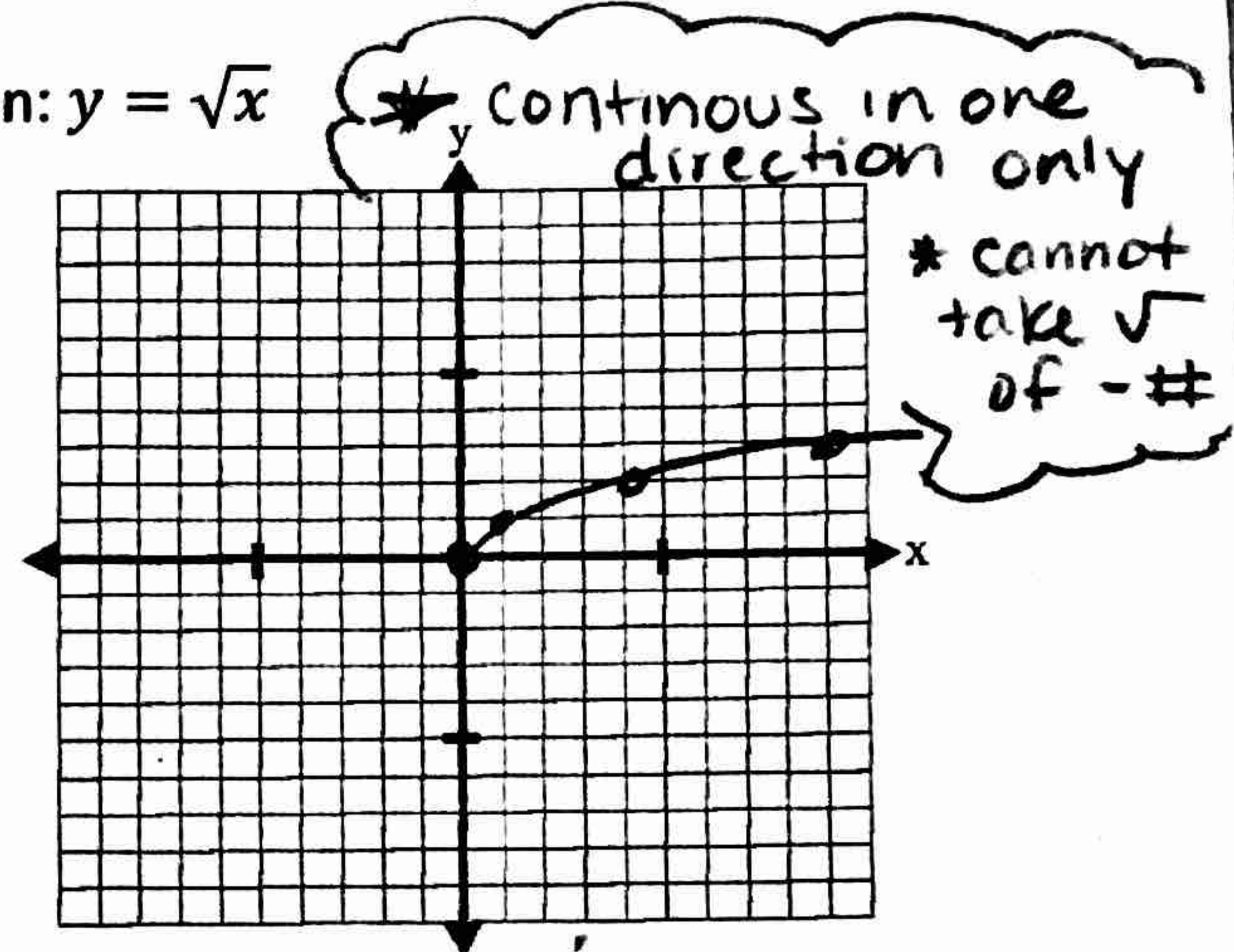
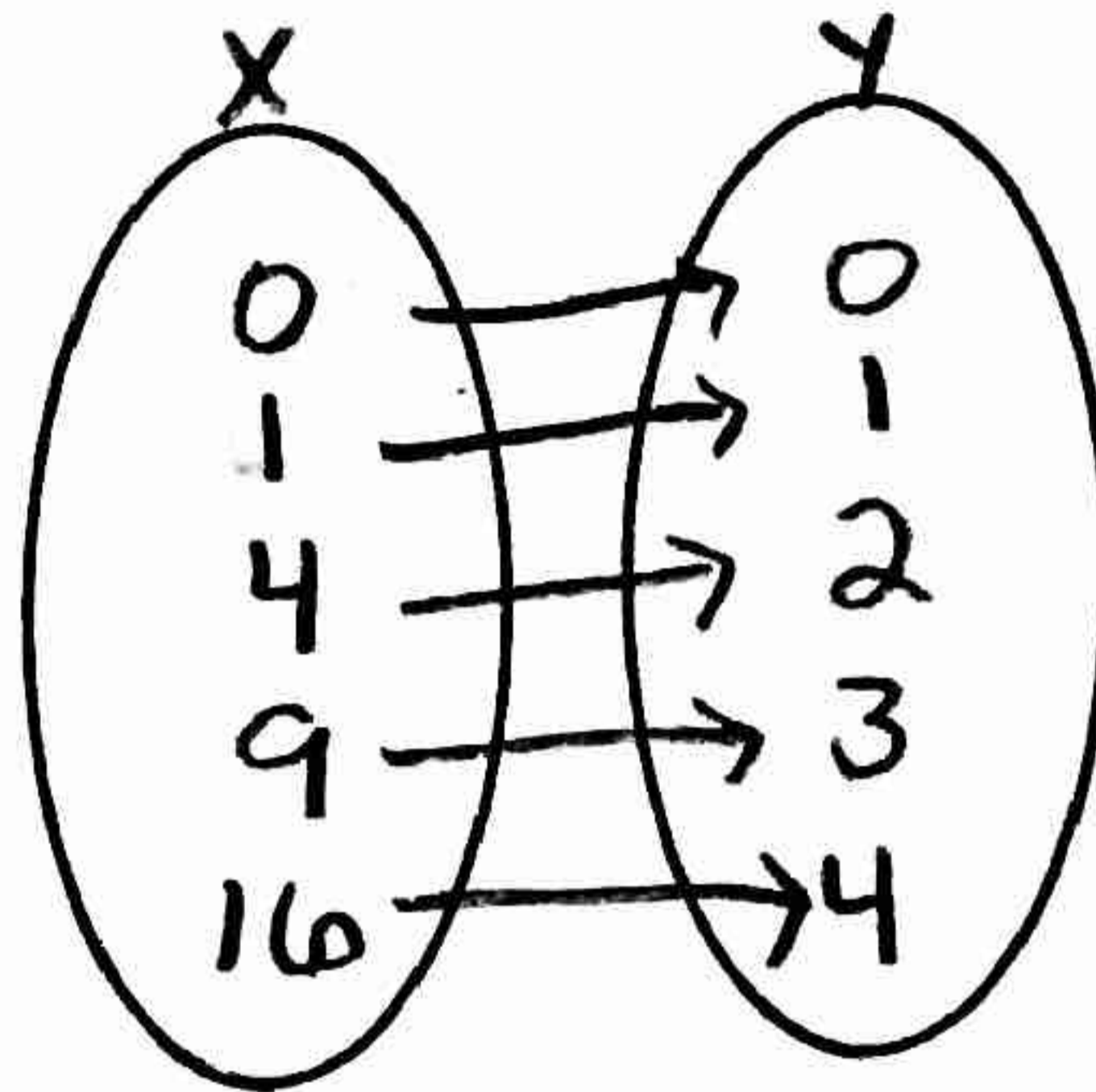
1. Make a table, mapping, and graph for following equation: $y = x^2 - 2$

x	$y = x^2 - 2$	y
-2	$(-2)^2 - 2$	2
-1	$(-1)^2 - 2$	-1
0	$(0)^2 - 2$	-2
1	$(1)^2 - 2$	-1
2	$(2)^2 - 2$	2



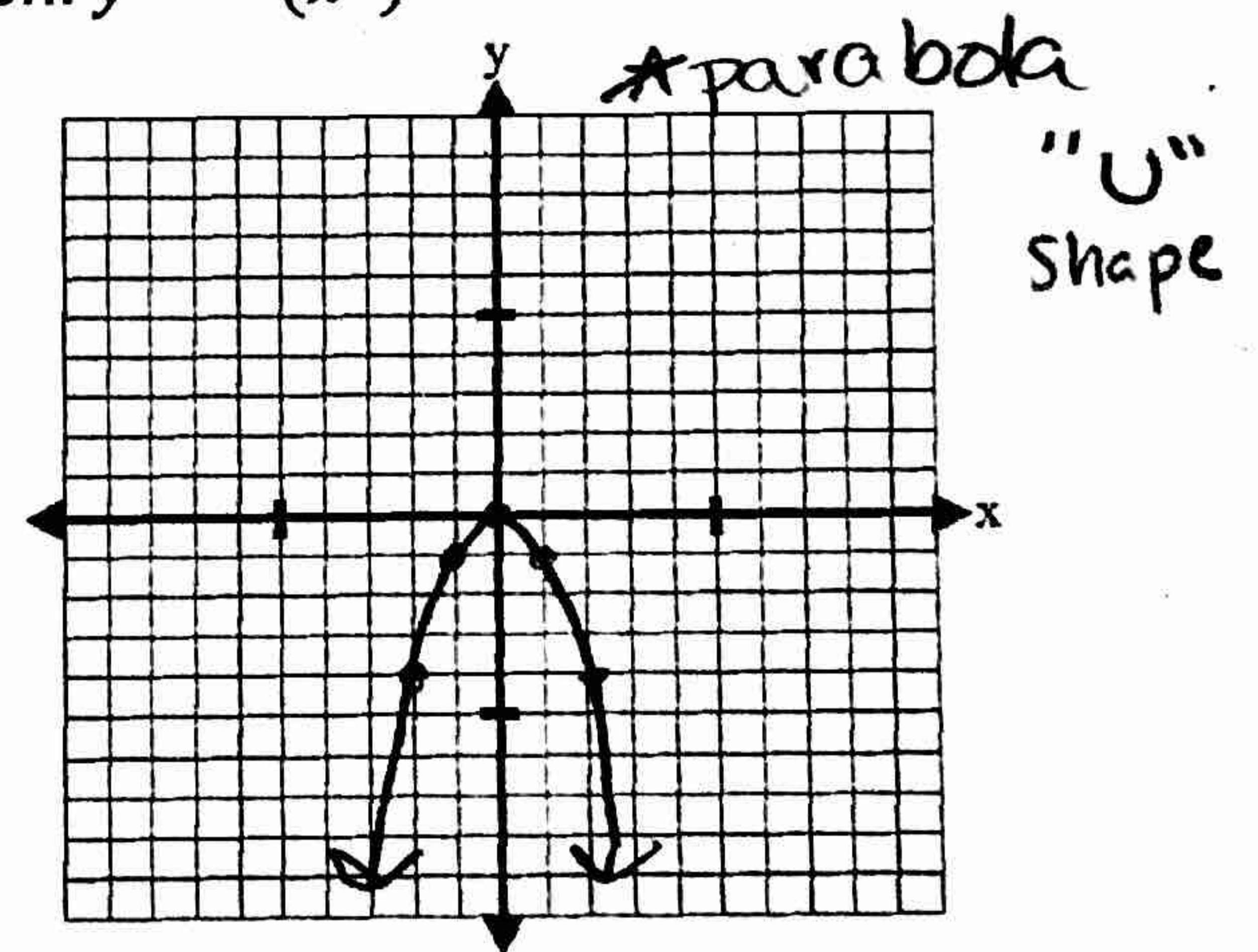
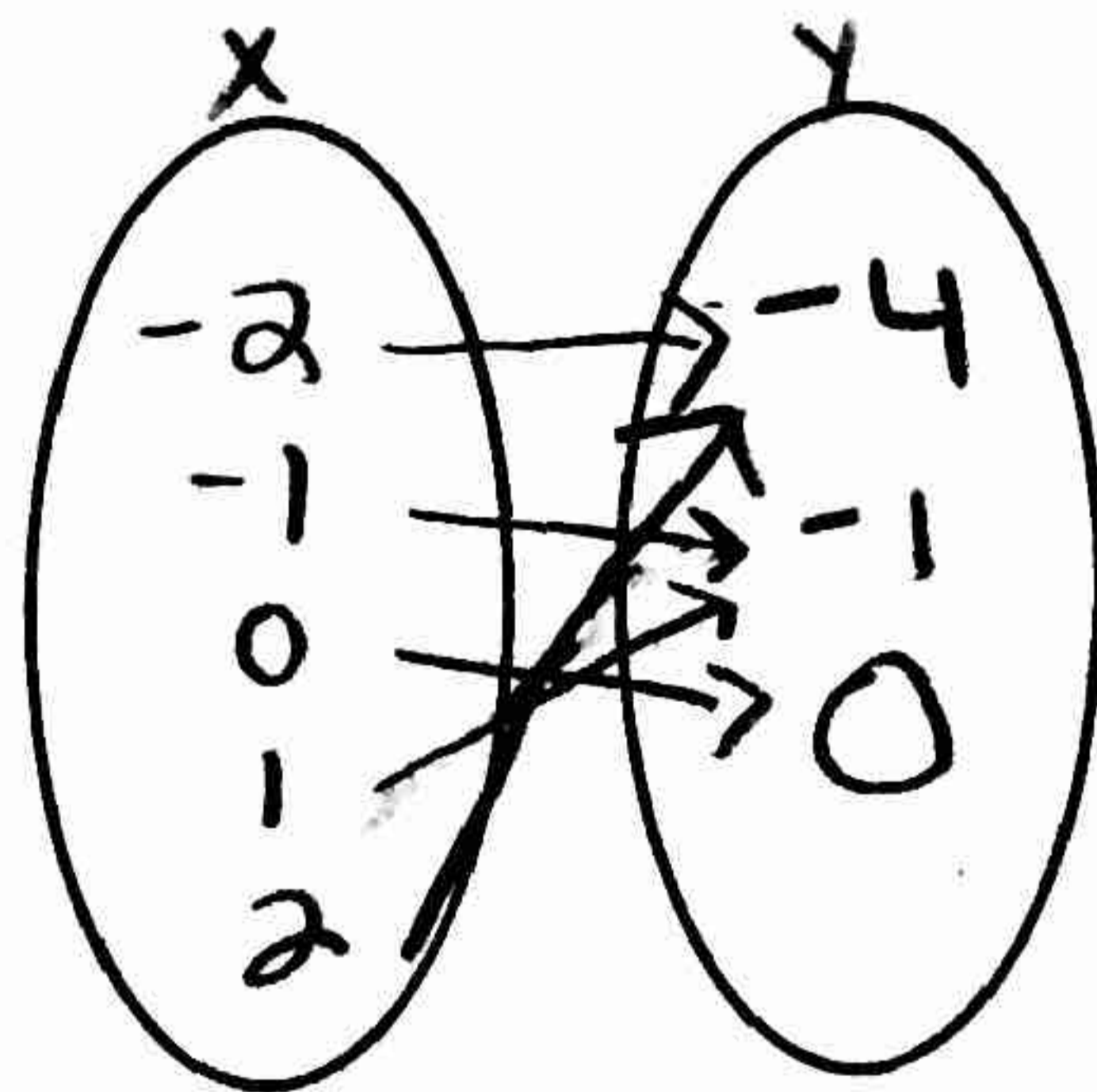
2. Make a table, mapping, and graph for following equation: $y = \sqrt{x}$

x	$y = \sqrt{x}$	y
0	$\sqrt{0}$	0
1	$\sqrt{1}$	1
4	$\sqrt{4}$	2
9	$\sqrt{9}$	3
16	$\sqrt{16}$	4



3. Make a table, mapping, and graph for following equation: $y = -(x^2)$

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



4. Make a table, mapping, and graph for following equation: $y = |x| + 1$

x	$y = x + 1$	y
-8	$ -8 + 1$	9
-4	$ -4 + 1$	5
0	$ 0 + 1$	1
4	$ 4 + 1$	5
8	$ 8 + 1$	9

