

3.4 The Graph of a Function

Procedure for plotting the graph of a Function

• Identify the domain of the function .

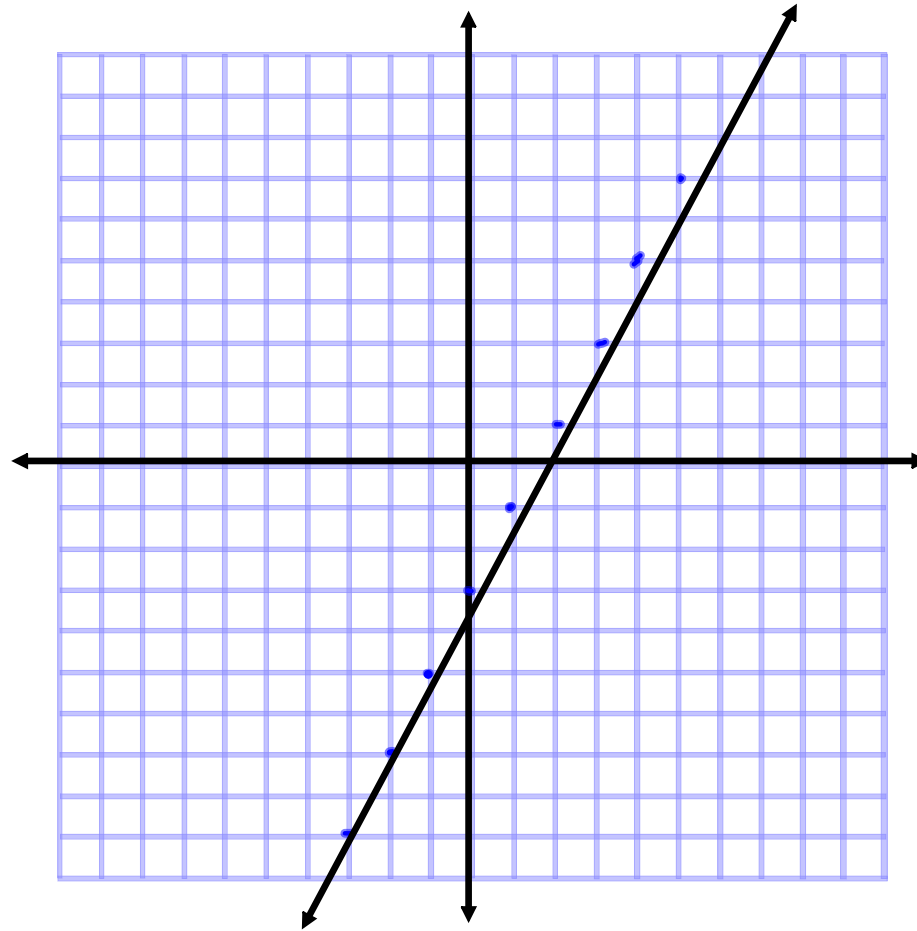
- Let x take on several values and calculate the corresponding values of y .
- Tabulate five values, arranging the table so that values of x are increasing.
- Plot the point and join them from left to right by a smooth curve.

1) Linear Functions :

$$f(x) = mx + b$$

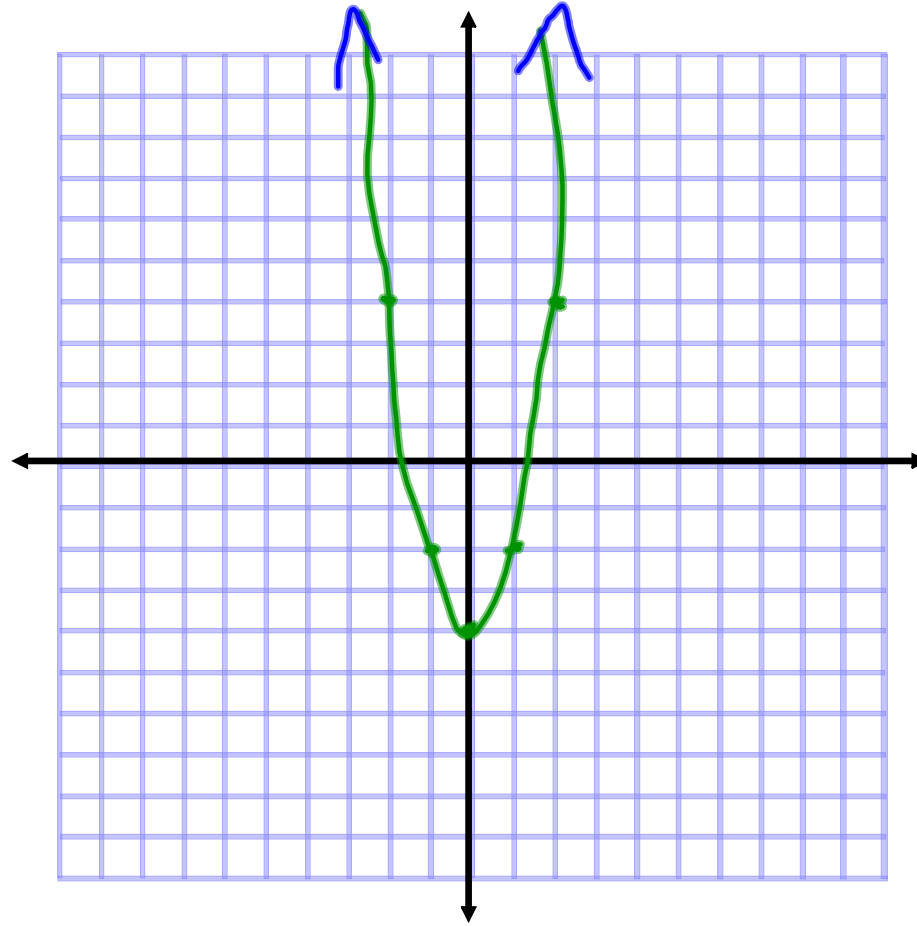
$$f(x) = 2x - 3$$

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



$$f(x) = 2x^2 - 4$$

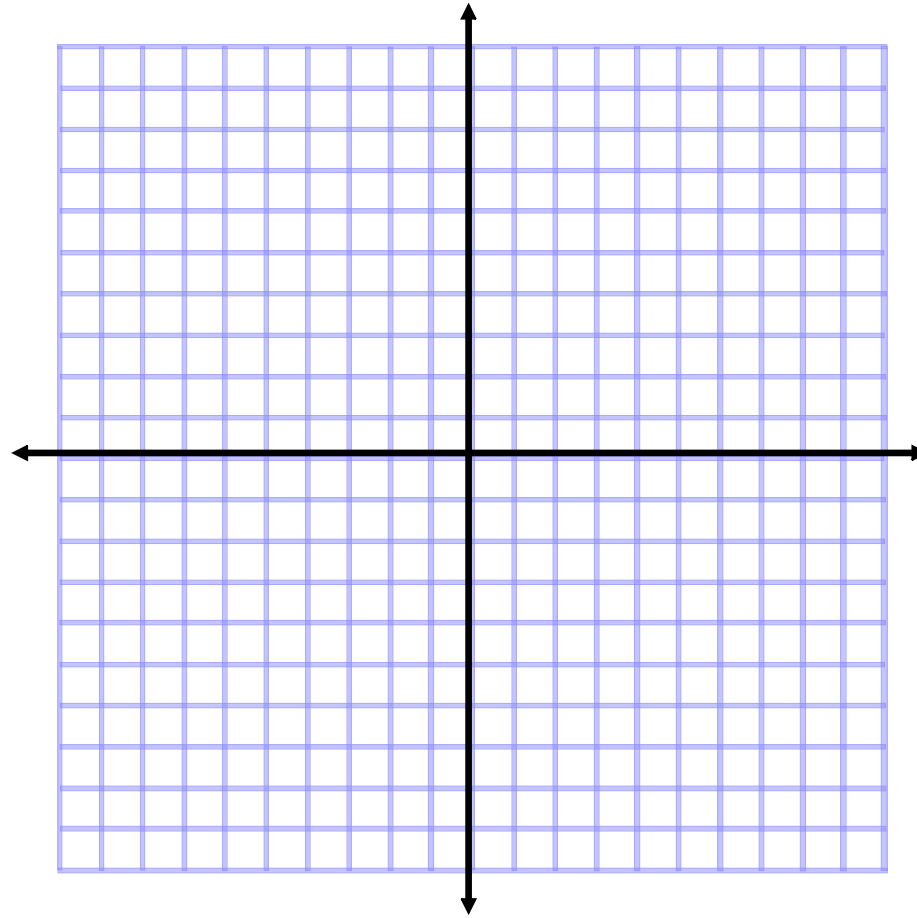
x	y
-2	0
-1	-2
0	-4
1	-2
2	0



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

2

x	y

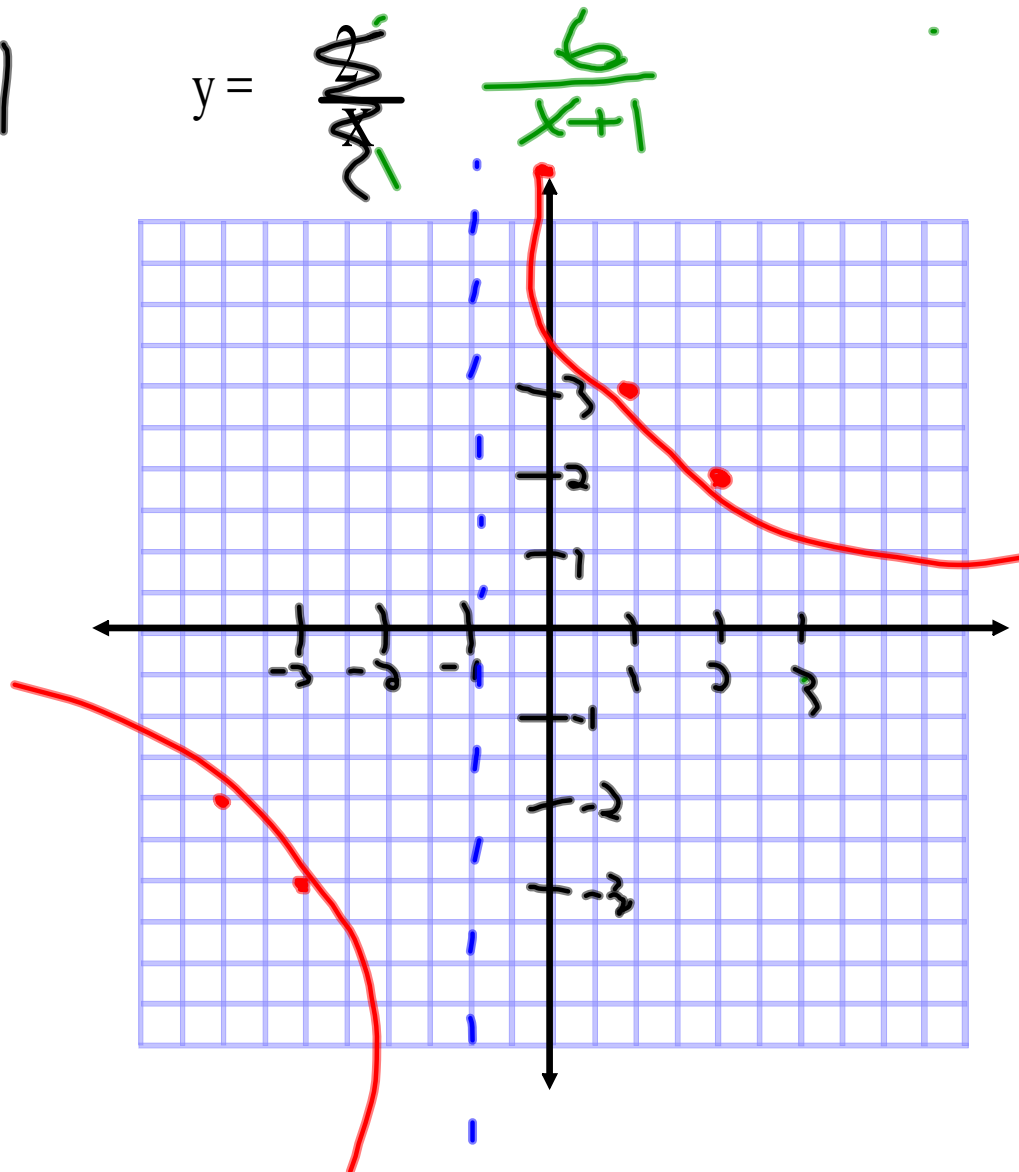


$$x \neq -1$$

$$y = \frac{6}{x+1}$$

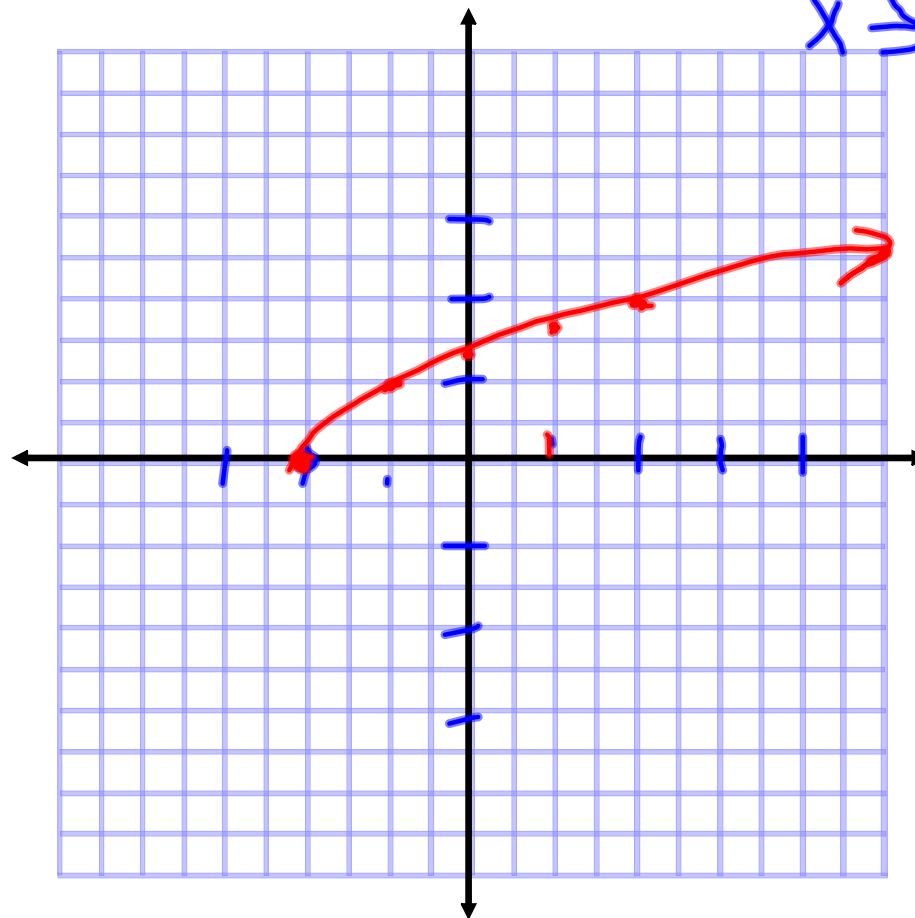
x	y
-6	-1.2
-5	-1.5
-4	-2
-3	-3
-2	-6

x	y
0	6
1	3
2	2
3	1.5
4	1.2



$$y = \sqrt{x+2}$$

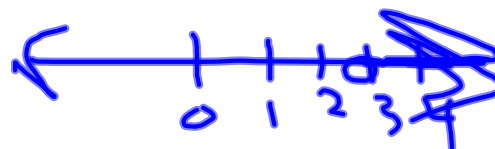
x	y
-2	0
-1	1
0	1.4
1	1.7
2	2



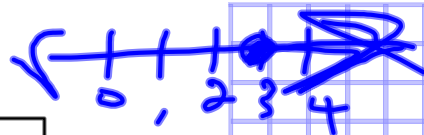
$$x+2 \leq \frac{0}{-2} \\ x \geq -2$$

$$f(x) = \begin{cases} 2x - 1 & (\text{for } x \leq 3) \\ 6 - x^2 & (\text{for } x > 3) \end{cases}$$

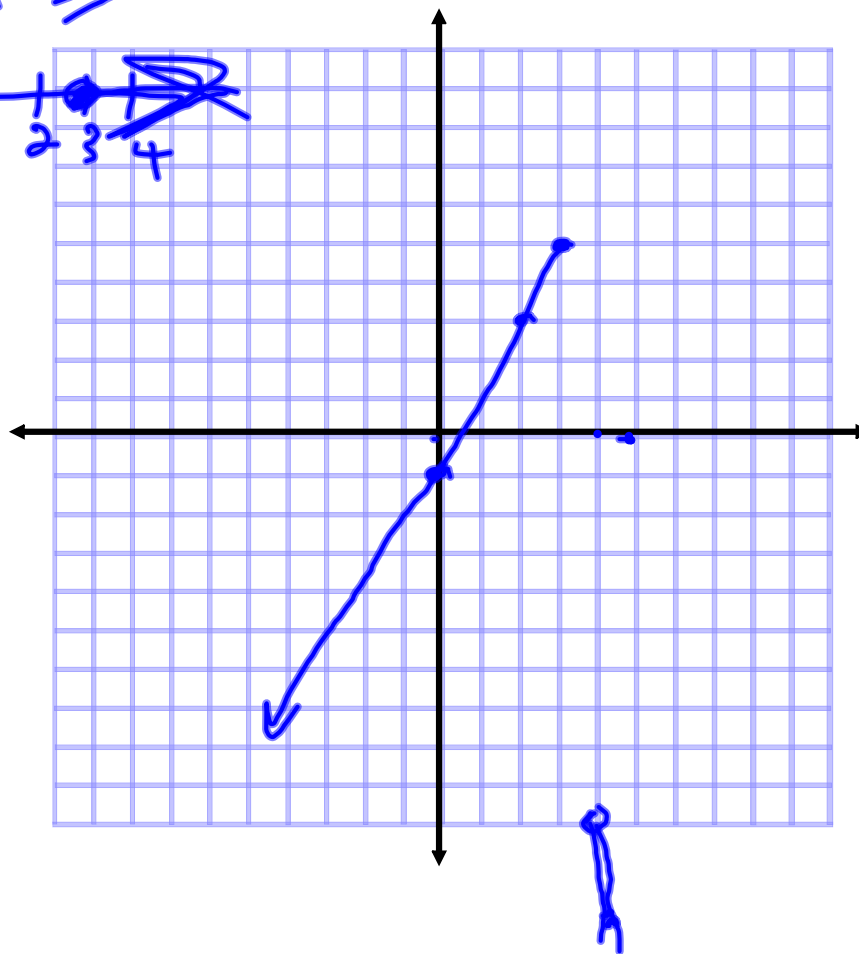
$$x > 3$$



$$x \geq 3$$



x	y
0	-1
2	3
3	5
5	-19
7	-43



$$f(x) = \begin{cases} x + 2 & x \geq 0 \\ x^2 - 1 & x < 0 \end{cases}$$

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

