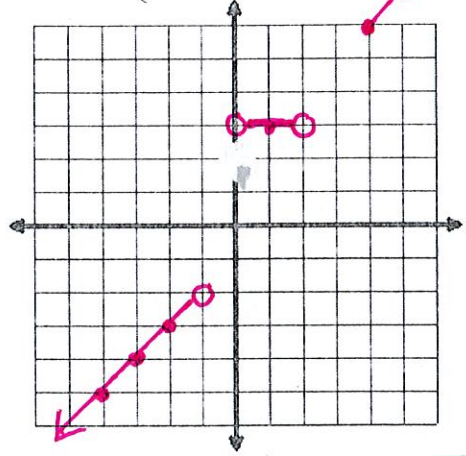


Piecewise Functions Worksheet

For each of the following functions: (a) graph, (b) state the domain, (c) state the range, (d) Is it continuous? If not, what is(are) the point(s) of discontinuity?

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

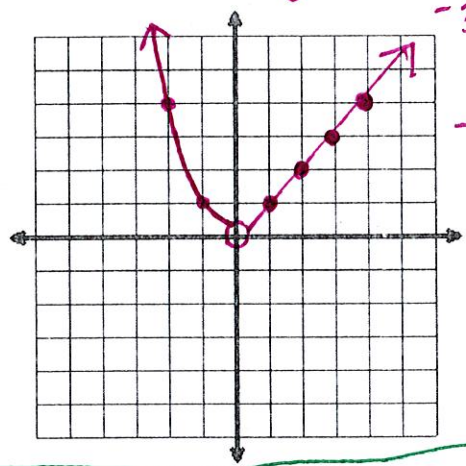
$$1. f(x) = \begin{cases} x-1, & x < -1 \\ 3, & 0 < x < 2 \\ x+2, & x \geq 4 \end{cases}$$



x	y
0	3
1	3
2	3

x	y
4	6
5	7
6	8

$$2. f(x) = \begin{cases} x^2, & x < 0 \\ |x|, & x > 0 \end{cases}$$

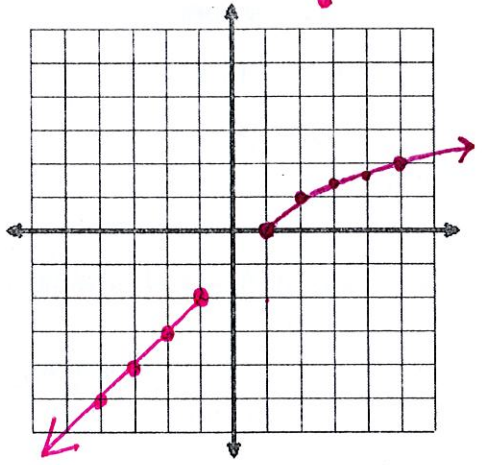


x	y
0	0
-1	1
-2	4
-3	9

x	y
0	0
1	1
2	2
3	3

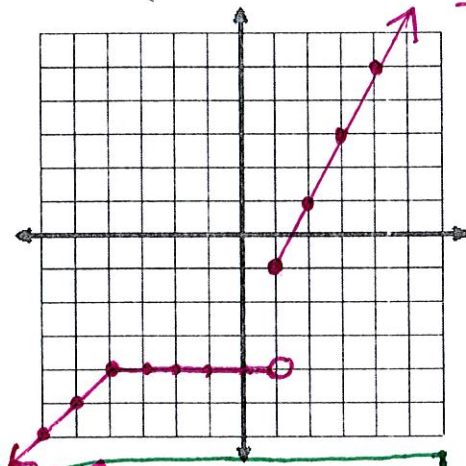
x	y
1	0
2	1
3	1.4
4	1.7
5	2

$$3. f(x) = \begin{cases} \sqrt{x-1}, & x \geq 1 \\ x-1, & x \leq -1 \end{cases}$$



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

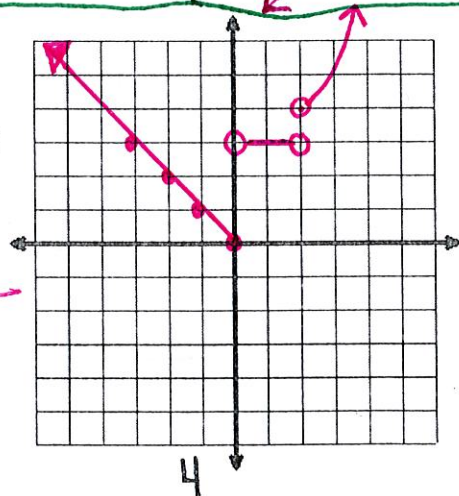
$$4. f(x) = \begin{cases} x, & x \leq -4 \\ -4, & -4 < x < 1 \\ 2x-3, & x \geq 1 \end{cases}$$



x	y
-4	-4
-5	-5
-6	-6

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

$$5. f(x) = \begin{cases} |x|, & x \leq 0 \\ 3, & 0 < x < 2 \\ x^2, & x > 2 \end{cases}$$



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

x	y
0	3
1	3
2	3

x	y
2	4
3	9
4	16

x	y
1	-1
2	1
3	3
4	5