

Graphing Piecewise Functions

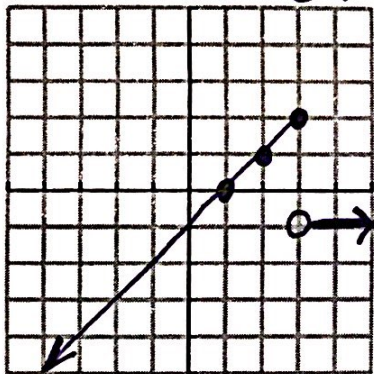
Graph ONE rule at a time.

- Steps: 1) Plot the break point with a solid dot or an open circle based on the inequality symbol.
 2) Pick a second x-value based on the given criteria for x. Determine the y value for that x-value and plot the point.
 3) Repeat step 2 to get a third point.
 4) Connect the three points.
 5) Repeat steps #1-4 for each rule

* Make a Table of values to show points *

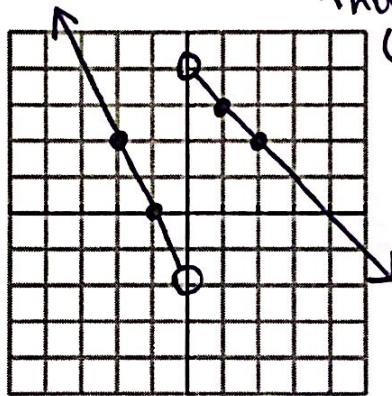
Examples: Graph the following piecewise functions

1) $f(x) = \begin{cases} x-1 & \text{if } x \leq 3 \\ -1 & \text{if } x > 3 \end{cases}$ ← hole @ (3, -1)



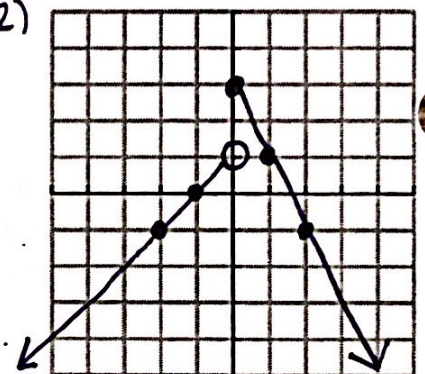
x	1	2	3	4	5
f(x)	0	1	2	-1	-1

2) $g(x) = \begin{cases} 4-x & \text{if } x > 0 \\ -2x-2 & \text{if } x < 0 \end{cases}$ ← hole @ (0, 4) and (0, -2)



x	-2	-1	0	1	2
g(x)	2	0	-1	3	2

3) $g(x) = \begin{cases} x+1 & \text{if } x < 0 \\ -2x+3 & \text{if } x \geq 0 \end{cases}$ ← hole @ (0, 1)

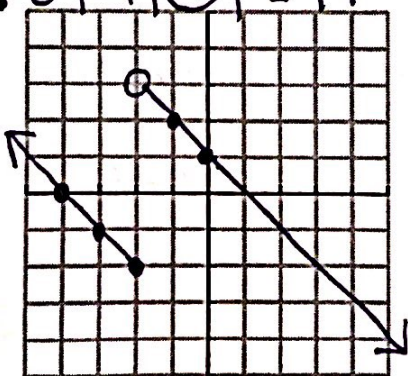


x	-2	-1	0	1	2
g(x)	-1	0	3	1	-1

Practice Graphing Piecewise Functions

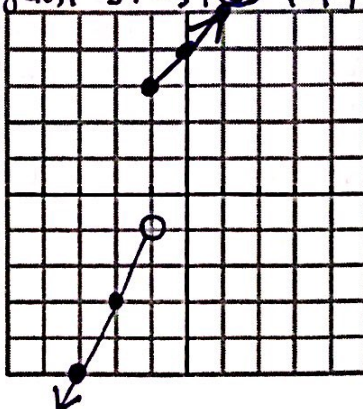
4) $g(x) = \begin{cases} -x-4 & \text{if } x \leq -2 \\ -x+1 & \text{if } x > -2 \end{cases}$ ← hole @ (-2, 3)

x	-4	-3	-2	-1	0
g(x)	0	-1	-2	2	1



5) $g(x) = \begin{cases} x+4 & \text{if } x \geq -1 \\ 2x+1 & \text{if } x < -1 \end{cases}$ ← hole @ (-1, -1)

x	-3	-2	-1	0	1
g(x)	-5	-3	3	4	5



6) $f(x) = \begin{cases} -1-x & \text{if } x < 0 \\ x+1 & \text{if } x \geq 0 \end{cases}$ ← hole @ (0, -1)

x	-2	-1	0	1	2
f(x)	1	0	1	2	3

