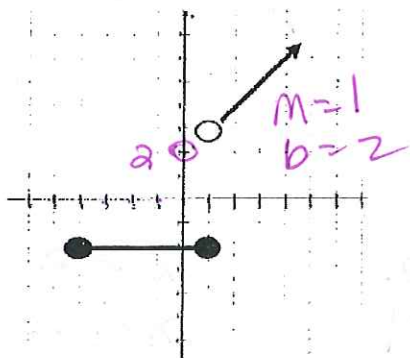


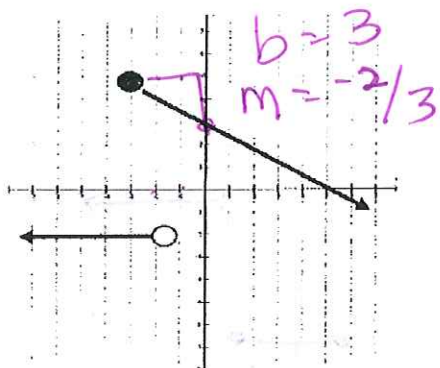
Working Backwards: Let's Try Writing Piecewise Functions from Their Graphs.

Example #1:



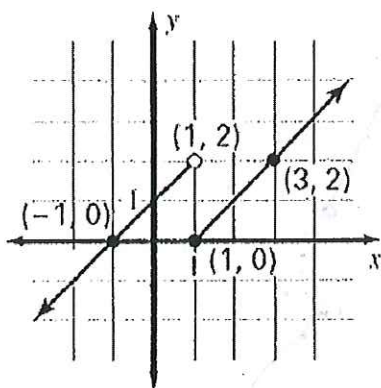
$$f(x) = \begin{cases} x+2, & x > 2 \\ -2, & -2 \leq x \leq 2 \end{cases}$$

Example #2:



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

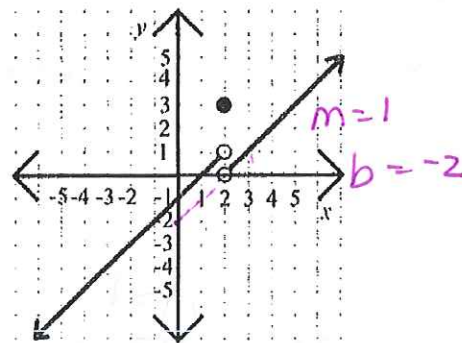
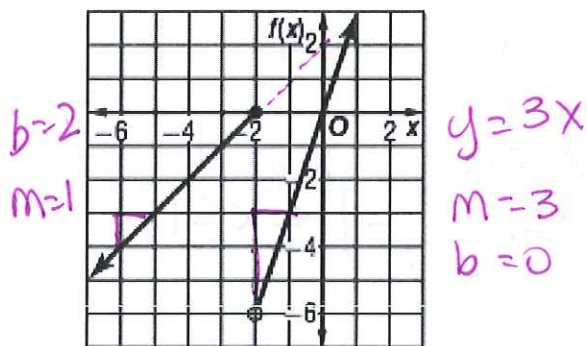
Example #3:



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

Example #4:

Challenge: Example #5:



$$f(x) = \begin{cases} 3x & x > -2 \\ x+2 & x \leq -2 \end{cases}$$

$$f(x) = \begin{cases} x-2 & x > 2 \\ x-1 & x < 2 \\ 3 & x = 2 \end{cases}$$

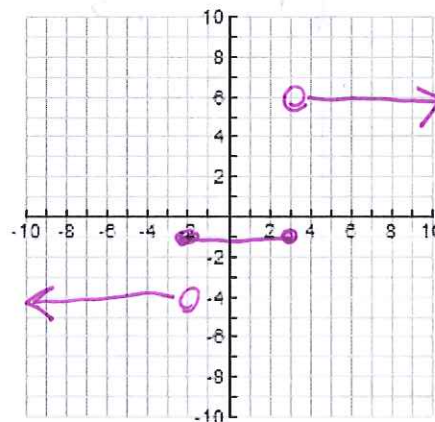
Review: Graph and evaluate the given piecewise functions.

Example #1"

$$f(x) = \begin{cases} -4, & \text{for } x < -2 \\ -1, & \text{for } -2 \leq x \leq 3 \\ 6, & \text{for } x > 3 \end{cases}$$

$f(-2) = \underline{-1}$

$f(5) = \underline{6}$



Example #2:

$$f(x) = \begin{cases} -2x & \text{for } x \leq -1 \\ -x - 4 & \text{for } x > -1 \end{cases}$$

State domain & range using interval notation.

D:  $(-\infty, \infty)$

R:  $(-\infty, -3) \cup [2, \infty)$

