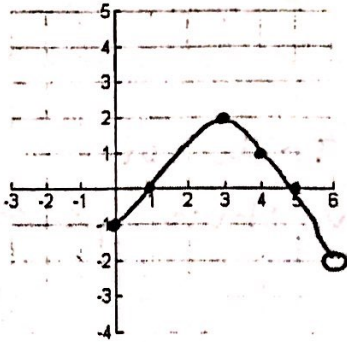# Pre-Calculus Honors

Graphs of Piecewise Functions

State the domain and range of the function shown by the following graph. Then use the graph to determine the indicated values.
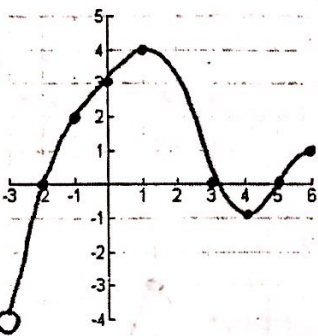
Ex 1:

Domain: $x \in$ $[0, 6)$ Range: $y \in$ $(-2, 2]$
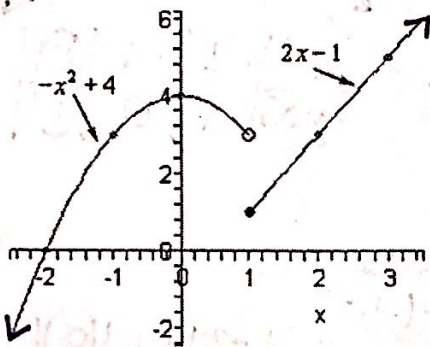
$f(4) =$ 1 $f(0) =$ -1 $f(6) =$ $-$

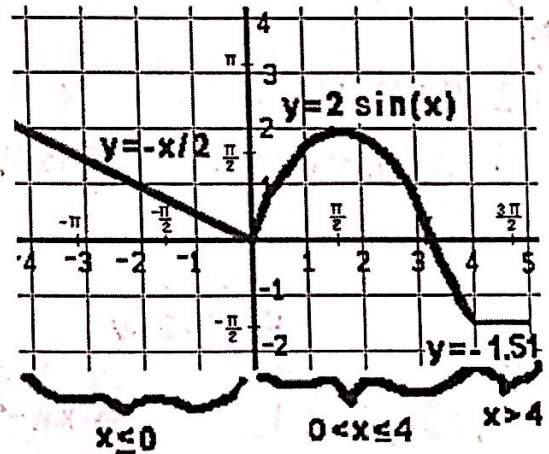**Ex.2: You try!**

Domain: $x \in$ $(-3, 6]$ Range: $y \in$ $(-4, 4]$

$f(1) =$ 4 $f(-3) =$ $-$ $f(6) =$ 1

Piecewise functions can be represented using a graph that will consist of several segments, each representing one of the rules/equations that defines the function. For each of the following graphs, write the piecewise function that the graph represents.

$2x - 1$

$-x^2 + 4$

$$f(x) = \begin{cases} -x^2 + 4 & \text{if } x < 1 \\ 2x - 1 & \text{if } x \geq 1 \end{cases}$$

$y = 2\sin(x)$

$y = -x/2$

$y = -1.5$

$x \leq 0$ $0 < x \leq 4$ $x > 4$

$$y = \begin{cases} -x/2 & \text{if } x \leq 0 \\ 2\sin x & \text{if } 0 < x \leq 4 \\ -1.51 & \text{if } x > 4 \end{cases}$$