

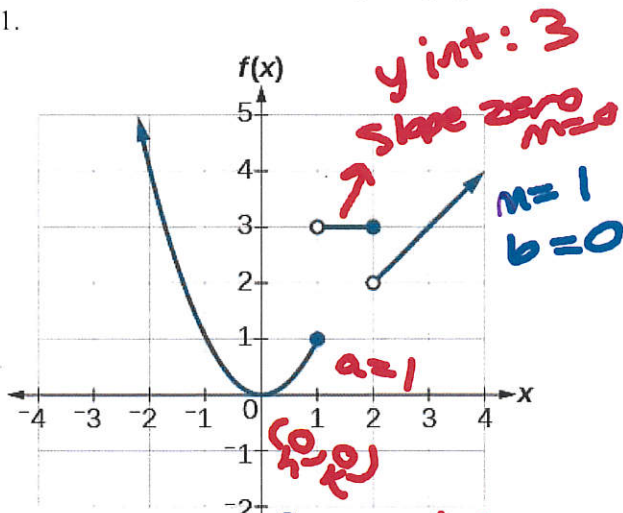
line: $y = mx + b$
 parabola: $y = a(x-h)^2 + k$
 V: (h, k)

Name: Key Hr: _____

Standard 3C Review: Piecewise Functions with Quadratic

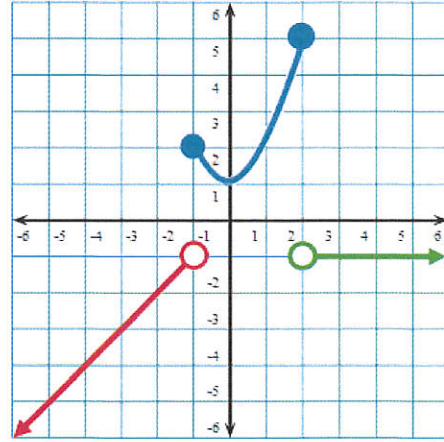
Write a Piece wise function for the given graphs.

1.



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

2.



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

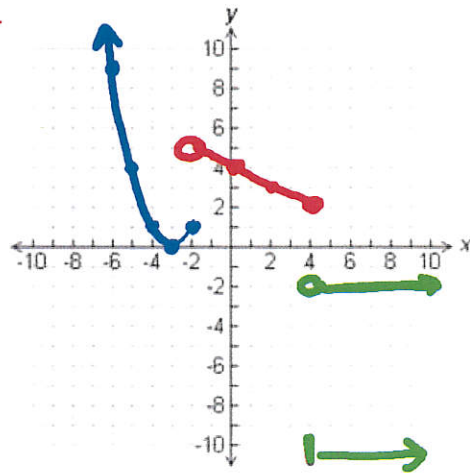
Sketch a graph of the piecewise function. Then evaluate the function at the specified domain values.

3. $f(x) = \begin{cases} (x+3)^2, & \text{if } x \leq -2 \\ -\frac{1}{2}x + 4, & \text{if } -2 < x \leq 4 \\ -2, & \text{if } x > 4 \end{cases}$

$f(4) = 2$
 $f(6) = -2$
 $f(-3) = 0$

Handwritten notes: $h, k, v: (-3, 0)$

x	y
-2	5
-1	4.5
0	4
1	3.5
2	3
3	2.5
4	2



4. $f(x) = \begin{cases} 2x - 1, & \text{if } x \leq -1 \\ -x^2 + 5, & \text{if } -1 < x \leq 2 \\ 3, & \text{if } x > 2 \end{cases}$

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

