Quiz 1 *Key*

This is a two-stage quiz. During the first stage, use your knowledge & calculator. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have the remainder of the quiz time to write one solution (with everyone's name on it!!!) to be turned in for the group.
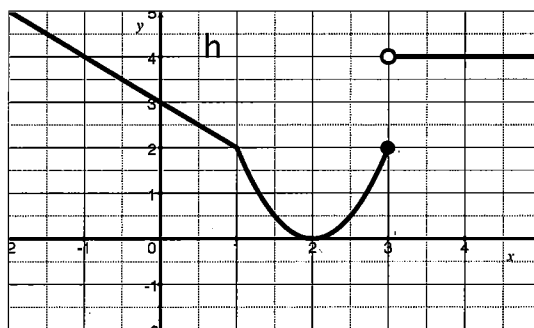
Show *all* your work. Reasonable supporting work must be shown for any partial credit.

1. [4] Use the graph of h below to find the limits (either numerically, graphically, or algebraically), if they exist:

$\S 2.3$ #2
Webwork #1

$h(3) + \lim\limits_{x\to 3^+} h(x)$ ⟶ from the positive/right

$2 + 4 = 6$
(+1) (+1)

notation (+.5)

$\lim\limits_{x\to 0}[4h(x)] = 4\lim\limits_{x\to 0} h(x)$ (+.5)

$= 4 \cdot 3 = 12$ (+.5) (+.5)

2. [4] Sketch the graph of a <u>function</u> α that satisfies *all* of the following.
(+1)

(a) $\alpha(0) = -3$ (✓)

(b) $\lim\limits_{x\to 0} \alpha(x) = 2$ (✓)

(c) $\lim\limits_{x\to 3^-} \alpha(x) = \infty$ (✓)

Limit Activity #3
$\S 2.2$ #16
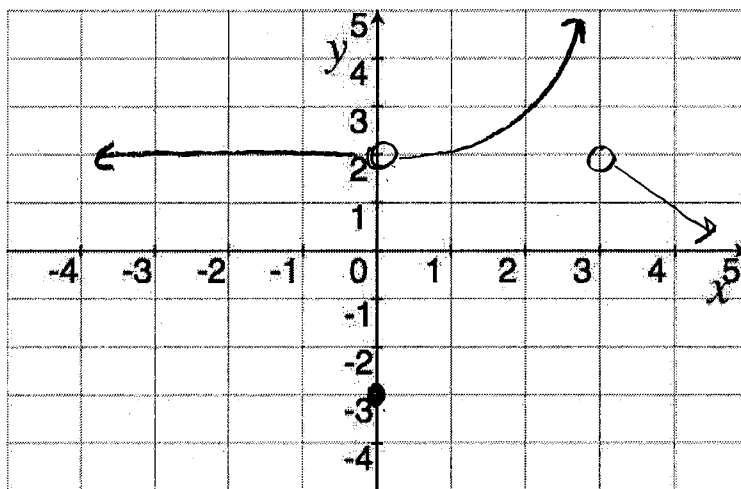
note: there are LOTS of correct answers for this?

3. [2] The deck of a bridge is suspended 235 feet above a river. If a pebble falls off the side of the bridge, the height, in feet, of the pebble above the water surface after t sections is given by $y = 235 - 16t^2$. Find the average velocity (in ft/sec) of the pebble between 3 seconds and 3.1 seconds.

Webwork #4

$\text{Ave vel} = \dfrac{\text{change in dist}}{\text{change in time}}$ (+.5) $= \dfrac{[235-16(3.1)^2] - [235-16(3)^2]}{3.1-3}$ (+.5)(+.5)

$= \dfrac{81.24 - 91}{3.1-3} = -97.6 \text{ ft/sec}$

note: Ave height = 81.24, 91 ✗