Show all work.

1. **(6 points)** This table indicates the position of a motorcycle accelerating from rest:

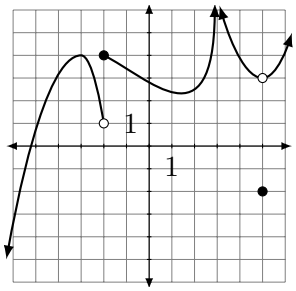
Time elapsed (in seconds)	0.0	1.0	2.0	3.0	4.0	5.0	6.0
Distance traveled (in feet)	0.0	4.9	20.6	46.5	79.2	124.8	176.7

   (a) **(2 points)** What is the motorcycle's average speed in the first four seconds of travel?

   (b) **(2 points)** What is the motorcycle's average speed between $t = 3$ and $t = 6$?

   (c) **(2 points)** If at time $t = 5.1$ the motorcycle has traveled 129.7 feet, estimate its *instantaneous* speed at time $t = 5$.

2. **(6 pts)** Below is the graph of a function $f(x)$. For each of the six quantities listed to the right, give its value if it has a value, identify an idiomatic "value" it has, or, if neither can be done, then specifically state that its value does not exist.



$\lim_{x\to -2^+} f(x)$ $\qquad$ $\lim_{x\to 5} f(x)$

$\lim_{x\to -2^-} f(x)$ $\qquad$ $f(5)$

$f(-2)$ $\qquad$ $\lim_{x\to 3} f(x)$

3. **(8 points)** Determine the value of each of the following limits, or indicate that the limit does not exist and explain why:

   (a) $\lim_{x\to 4} \frac{3x^2-2x-40}{x^3-64}$.

   (b) $\lim_{s\to 1} \frac{s^3+2}{s^2-1}$.

   (c) $\lim_{t\to -2} \frac{2t^2-3t+1}{t+5}$.