This quiz is intended to help you prepare for the exams. Thus, you should attempt all questions and write their answers (including your explanations) in the space provided. This quiz will not be collected or graded.

1. A ball drops from the top of a building which is 60 meters tall. Assuming that the ball falls \( s = 4.9t^2 \) meters after \( t \) seconds, find:
(a) the distance the ball traveled after 2 seconds,
(b) the average velocity between 2 and 3 seconds.

(a) The distance traveled after 2 seconds is
\[
4.9(2)^2 = 4.9(4) = 19.6 \text{ meters}
\]

(b) The average velocity between 2 and 3 seconds is
\[
\frac{s(3)-s(2)}{3-2} = \frac{4.9(3)^2 - 4.9(2)^2}{3-2} = \frac{4.9(9)-4.9(4)}{1} = 4.9(5) = 24.5 \text{ meters/second}
\]

2. Let \( f \) be the function whose graph is below. For each limit, give the value or explain why the limit does not exist.
(a) \( \lim_{x \to 2} f(x) \)  
(b) \( \lim_{x \to 4} f(x) \).

(a) \( \lim_{x \to 2} f(x) \) DNE because
\[
\lim_{x \to 2^-} f(x) = 1 \neq 3 = \lim_{x \to 2^+} f(x)
\]

(b) \( \lim_{x \to 4} f(x) = 2 \).