Warm-up Problems

1. Determine your speed in each of the situations:

   (a) You jump in your car at 10AM, drive 100 miles and arrive at your destination at noon.

   (b) You leave your dorm room at 10PM for a party 2 miles away. You walk there and arrive at 10:30PM.

2. Find the slope between the line determined by the given points:

   (a) (2, 3) and (5, 10)

   (b) (10, 13) and (101, 47)

Lecture Problems

3. Compute the following limits. Be sure to try to do these graphically, with a table, and algebraically.

   (a) \( \lim_{x \to 4} \frac{1}{x} = \)

   (b) \( \lim_{h \to 1} \frac{h^2 - h}{h - 1} = \)

   (c) \( \lim_{h \to 0} \frac{(1+h)^2 - 1}{h} = \)

   (d) \( \lim_{x \to -1} \frac{x}{x+1} = \)

   (e) \( \lim_{x \to -1} \frac{x^2 + x}{x+1} = \)
4. Consider the graph of the function $F(x)$ below.

(a) $F(0) =$  
(b) $F(1) =$  
(c) $F(2) =$  
(d) $F(3) =$  
(e) $F(4) =$  
(f) $F(5) =$

5. Same graph and function as the previous problem.

(a) $\lim_{x \to 1} F(x) =$  
(b) $\lim_{x \to 2} F(x) =$  
(c) $\lim_{x \to 3} F(x) =$  
(d) $\lim_{x \to 4} F(x) =$

6. Same graph and function.

(a) $\lim_{x \to 1^-} F(x) =$  
(b) $\lim_{x \to 1^+} F(x) =$  
(c) $\lim_{x \to 2^-} F(x) =$  
(d) $\lim_{x \to 2^+} F(x) =$  
(e) $\lim_{x \to 3^-} F(x) =$  
(f) $\lim_{x \to 3^+} F(x) =$  
(g) $\lim_{x \to 4^-} F(x) =$  
(h) $\lim_{x \to 4^+} F(x) =$