Math 131 - January 27, 2015

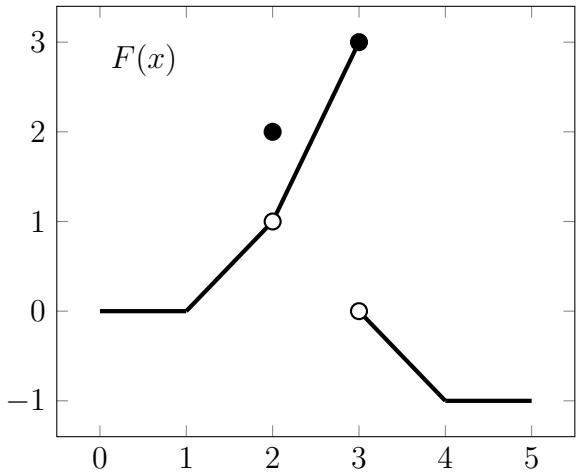
Warm-up Problems

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) $\lim_{x\to 4^+} F(x) =$