Problem Set 5 Writeup

Joshua Cole

June 53, 2013

1 Limits and Discontinuity

1. $\lim_{x \to 0} \sqrt{x}$ is undefined when $x < 0$.
   $\lim_{x \to 0^+} \sqrt{x} = 0$

2. $\lim_{x \to -1} \frac{1}{x+1}$ is undefined when $x = -1$.
   $\lim_{x \to -1^+} \frac{1}{x+1} = \infty$
   $\lim_{x \to -1^-} \frac{1}{x+1} = -\infty$

3. $\lim_{x \to 1} \frac{1}{(x+)^4} = \infty$

4. $\lim_{x \to 0} |sinx| = 0$

5. $\lim_{x \to 0} \frac{|x|}{x}$ is undefined when $x = 0$.
   $\lim_{x \to 0^+} \frac{|x|}{x} = 1$
   $\lim_{x \to 0^-} \frac{|x|}{x} = -1$