

Math 10a
September 9, 2014
Limits

1.

$$\lim_{x \rightarrow 1^-} \frac{1}{x^2 - 1}, \lim_{x \rightarrow 1^+} \frac{1}{x^2 - 1}, \lim_{x \rightarrow 0} \frac{1}{x^2 - 1}, \lim_{x \rightarrow 1} \frac{x - 1}{x^2 - 1}$$

2.

$$\lim_{x \rightarrow 5} \frac{x + 2}{x^2 - 2x + 1}, \lim_{x \rightarrow 1} \frac{x + 2}{x^2 - 2x + 1}.$$

3.

$$\lim_{x \rightarrow 0} \ln(x), \lim_{x \rightarrow \infty} e^{-x}, \lim_{x \rightarrow \infty} \frac{1}{1 + e^x}, \lim_{x \rightarrow \infty} \frac{1 + e^x}{1 - e^x}.$$

4.

$$\lim_{x \rightarrow \frac{\pi}{4}} \sin(x), \lim_{x \rightarrow \pi} \frac{1}{\sin(x)}, \lim_{x \rightarrow \frac{\pi}{2}} \tan(x), \lim_{x \rightarrow \frac{\pi}{2}^-} \tan(x).$$

5.

$$f(x) = \begin{cases} 2x + 1 & x \leq 3 \\ x^2 & x > 3 \end{cases}$$

$$\lim_{x \rightarrow 1} f(x), \lim_{x \rightarrow 3} f(x), \lim_{x \rightarrow 3^+} f(x)$$