# Math 101 (03): Homework #11

due Tuesday, Nov.2

**Problems 28,30,32 from Chapter 17** (page 57).

Compute the following limits.

**28.** a. $\lim\limits_{x\to 8^+} \dfrac{5}{x-8}$

b. $\lim\limits_{x\to 8^-} \dfrac{5}{x-8}$

**30.** a. $\lim\limits_{x\to 3^+} \dfrac{x^2+5x-14}{x^2+x-12}$

b. $\lim\limits_{x\to 3^-} \dfrac{x^2+5x-14}{x^2+x-12}$

**32.** a. $\lim\limits_{x\to 5^+} \dfrac{9x^2}{x^2-10x+25}$

b. $\lim\limits_{x\to 5^-} \dfrac{9x^2}{x^2-10x+25}$

c. $\lim\limits_{x\to -3^+} \dfrac{x^2+7x+10}{x^2-10x+11}$

**Problems 12,14,16,18,20 from Chapter 10** (pages 90-91).

**12.** Arrange the following functions in a chain of $\ll$.

$e^{2x},\ \ln x,\ 100x^4,\ \frac{1}{100}e^x,\ \frac{1}{100}e^{3x},\ \frac{1}{100}\sqrt{x}$

Compute the following limits.

**14.** $\lim\limits_{x\to +\infty} \dfrac{3x^2+2x+1}{4x^2+10x+7}$

**16.** $\lim\limits_{x\to +\infty} \dfrac{5x+2e^x}{\ln x + e^{2x}}$

**18.** $\lim\limits_{x\to +\infty} \dfrac{e^x}{x^{10^{20}}}$

**20.** a. $\lim\limits_{x\to 4^+} \dfrac{x^2-4}{x-4}$

b. $\lim\limits_{x\to 4^-} \dfrac{x^2-4}{x-4}$