Homework and Quiz 6

Due Wednesday, July 8, 2009

Ungraded homework

For practice, you should try:

Section 15.1, page 901, problems 7, 11, 13, 29, 31.
Section 15.2, page 913, problems 5, 9, 13, 19, 25, 29, 33.

Of these, the most important are those in section 15.2; "limit" is the most important idea in Calculus.

Graded Quiz

Find the limit, or show that it does not exist.

(a) $\lim_{(x,y)\to(0,0)} e^{-xy}\cos(x+y)$.

(b) $\lim_{(x,y)\to(0,0)} \dfrac{x^4-y^4}{x^2+y^2}$.

(c) $\lim_{(x,y)\to(0,0)} \dfrac{xy^4}{x^2+y^8}$.

(d) Problem 40 in section 15.2: use polar coordinates to find the limit.

$$\lim_{(x,y)\to(0,0)} (x^2+y^2)\log(x^2+y^2).$$

(e) Again, use polar coordinates to evaluate

$$\lim_{(x,y)\to(0,0)} \frac{\sin(x^2+y^2)}{x^2+y^2}.$$