

King Fahd Univ. of Petroleum and Minerals  
Faculty of Sciences  
Department of Mathematical Sciences

QUIZ No. 2  
(MATH. 101-041 Sections 4 & 8)

**Name:**

**ID:**

**Prob. 1**

Find the limit  $\lim_{t \rightarrow +\infty} \frac{2t+t \sin 3t}{5t^2-2t+1}$

**Prob. 2**

The minute hand of a certain clock is 4 *in* long. Starting from the moment when the hand is pointing straight up, how fast is the area of the sector that is swept out by the hand increasing at any instant during the next revolution of the hand?

**Prob. 3**

Let  $y = \frac{x}{x^2+1}$ . Find an approximation for  $\Delta y$  when  $x$  changes from 2 to 1.96.