MATH 1210-90 Fall 2011
First Midterm Exam

INSTRUCTOR: H.-PING HUANG

LAST NAME _____

FIRST NAME _____

ID NO. _____

INSTRUCTION: SHOW ALL OF YOUR WORK. MAKE SURE YOUR ANSWERS ARE CLEAR AND LEGIBLE. USE **SPECIFIED** METHOD TO SOLVE THE QUESTION. IT IS NOT NECESSARY TO SIMPLIFY YOUR FINAL ANSWERS.

PROBLEM 1   20   _____

PROBLEM 2   20   _____

PROBLEM 3   20   _____

PROBLEM 4   20   _____

PROBLEM 5   20   _____

TOTAL   100   _____

PROBLEM 1

(20 pt) Find the equation of the circle having the segment from $(1, 3)$ to $(7, 11)$ as a diameter.

PROBLEM 2

(20 pt) Find the equation of the line which bisects the line segment from $(0, 0)$ to $(2, 6)$ at right angles.

PROBLEM 3

(20 pt) Find

$$\text{a.} \lim_{x \to 2} \frac{x^2 + 3x - 10}{x^2 + x - 6}$$

$$\text{b.} \lim_{x \to 1} \frac{x - 1}{\sqrt{x} - 1}$$

PROBLEM 4

(20 pt) Find

$$\text{a. } \lim_{t \to 0} \frac{t^2 \cos t}{t + 1}$$

$$\text{b. } \lim_{x \to 1} \frac{\sin 4x}{\tan x}$$

PROBLEM 5

(20 pt) Find

$$\text{a. } \lim_{x\to\infty} \frac{x}{x^2+1}$$

$$\text{b. } \lim_{x\to-\infty} \frac{2x^3}{x^3+1}$$