MATH 132 **EXAMINATION 3** 11-17-2005

This exam should have 15 questions. The first 10 questions are multiple choice questions worth 7 points each. The next three questions are TRUE or FALSE questions worth 4 points each. The last two questions are hand graded and are worth 9 points each. Please check to see that your exam is complete. If you do not have a pencil to mark your card please request your proctor for one.

Write your ID number (not your SS number) on the six blank lines at the top of your answer card using one blank for each digit. Shade in the corresponding boxes below. Also print your name at the top of your card.

As you work the exam, lightly shade in the correct answers on your answer card. At the end of your exam when you are certain of all your choices *darken* all your answer boxes. If your card becomes damaged please ask your proctor for a new one.

## Instructions for the hand graded part

Problems 14 and 15 are hand graded and each is worth 9 points. Write your answers on the test page. Show your work neatly and cross out irrevelant scratch work, false starts etc. A mere final answer will only get partial credit. You must show the complete work showing all steps.

Please put your name on each of the pages containing Problems 14 and 15, since they may be separated during grading. Also please add your Discussion Section Letter, which can be found on the first page of this exam, on both these pages.

1. Find the average value of the function $f(x) = e^x$ in the interval $[0, \ln 2]$.

(A) $\frac{2}{\ln 2}$
(B) $\frac{2}{\ln 2} - 1$
(C) $\frac{2}{3 \ln 2}$
(D) $\frac{1}{\ln 2}$
(E) $\frac{2}{\ln 2} + 1$
(F) $\frac{1}{\ln 2} + 2$
(G) $\frac{1}{\ln 2} + 1$
(H) $\frac{2}{3 \ln 2} + 2$
(I) $\frac{2}{\ln 2} - 2$
(J) $\frac{3}{2 \ln 2} - 2$

2. A force of 10 N is required to hold a spring stretched 5 cm beyond its natural length. How much work is done in stretching from its natural length to 10 cm beyond its natural length?

(A) 1 Joule
(B) 2 Joules
(C) 3 Joules
(D) 4 Joules
(E) 5 Joules
(F) 6 Joules
(G) 7 Joules
(H) 8 Joules
(I) 9 Joules
(J) 10 Joules