

Calculus II for the Life, Social and Managerial Sciences

Math 128 — Fall 2007

Final exam December 17

Name:

Student-ID:

This exam contains 20 multiple choice questions, which count 5% each towards your total score. If your answer to a question is not exactly equal to the answers given, choose the closest answer. The last page of this exam displays a normal distribution table which you can use.

Problem 1

The highway department kept track of the number of accidents on a 10-mile stretch of a major highway every day during the third week of December. They found that there were:

1 day with no accidents
2 days with 1 accident
2 days with 2 accidents
No days with 3 accidents
1 day with 4 accidents
1 day with 5 accidents

Let X be the random variable that represents the number of accidents on a randomly chosen day in the third week of December.

Find $E(X)$.

- | | |
|---------|---------|
| A) 1.94 | E) 2.34 |
| B) 2.04 | F) 2.44 |
| C) 2.14 | G) 2.54 |
| D) 2.24 | H) 2.64 |

Problem 2

Evaluate

$$\int_0^{\sqrt{\pi}} x \sin(x^2 - \pi) dx$$

- A) -2
- B) -1
- C) -0.5
- D) 0
- E) 0.5
- F) 1
- G) 2
- H) π

Problem 3

Suppose 4% of the students at a large university have red hair. You interview a number of students, one at a time.

Find the probability that the fifth student interviewed is the first to have red hair.

- A) 0.024
- B) 0.034
- C) 0.044
- D) 0.054
- E) 0.120
- F) 0.170
- G) 0.220
- H) 0.270