

Math 107

Exam #III

Name _____

Print Please

Apr. 04, 1997

Student # _____

There are two pages of questions. Each question is worth 10 points. The answer sheet is the third page. Mark Each of your choices with an X. If you change your mind black out the old answer and place an X in your new choice. Questions with more than one X on the answer sheet will receive zero credit.

This test is subject to the honor credit.

On my honor, I have neither given nor received unauthorized aid on this exam.

Scores on an exam given to a large group of people were found to be approximately normally distributed with $\mu = 88$ and $\sigma = 5$. Use this information for problems 1 to 5.

1. The probability that a person picked at random scored higher than 103 is

(A) 16% (B) .3% (C) 2.5% (D) 5% (E) .15%.

2. The 95% confidence interval consists of scores between

(A) 84.65 and 91.35 (B) 75 and 99 (C) 81 and 97
(D) 0 and 95 (E) 78 and 98

3. The middle 50% of the scores lies between

(A) 0 and 88 (B) 78 and 98 (C) 82.98 and 91.02
(D) 84.65 and 91.35 (E) 86.32 and 91.68

4. The probability that a person picked at random scored less than 88 is

(A) 50% (B) 88% (C) 68% (D) 25% (E) 84.65%

5. The variance for the distribution of scores is

(A) 0 (B) 36 (C) 25 (D) 13 (E) 16

Results of a survey on the need for a change in school policy showed that 49% of those polled believed the need existed. The margin of error at the 95% confidence level was 2.4%. Use this information for problems 6 to 9.

6. The average percent of those who said that such a need existed was
- (A) 68% (B) 47% (C) 51.4% (D) 45% (E) 49%
7. What was the standard deviation for this sampling ?
- (A) 1.8% (B) 3.9% (C) 1.2% (D) 2.3% (E) 3.6%
8. Suppose that another survey from the same population was taken but with a sample size 10 times larger. The new standard deviation correct to 2 decimal places is
- (A) 0.38% (B) 0.12% (C) 0.57%
(D) 2.79% (E) 0.73%
9. What would be the margin of error for this survey at the 68% confidence level ?
- (A) $\pm 2.3\%$ (B) $\pm 2.4\%$ (C) $\pm 3.6\%$
(D) $\pm 1.2\%$ (E) $\pm 1.8\%$
10. You play a game of chance in which you can win \$2 or lose \$4. If the probability of winning is 0.75 what is your average winnings in dollars over a large number of games?
- (A) 0.50 (B) - 0.50 (C) 1.25 (D) - 0.75 (E) 1.00

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| 1. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E | 6. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E |
| 2. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E | 7. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E |
| 3. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E | 8. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E |
| 4. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E | 9. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E |
| 5. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E | 10. | <input type="checkbox"/> A | <input type="checkbox"/> B | <input type="checkbox"/> C | <input type="checkbox"/> D | <input type="checkbox"/> E |

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Signature _____