

Name (printed) _____

Section _____

Name (signature) _____

Regular Assigned Seat _____

ZID. NO. _____

MATH 101, Lecture B

EXAM 1

FORM A

February, 2004

3:00-3:50 p.m.

INSTRUCTIONS:

1. Use a No. 2 pencil.
2. Write your last name and initials in the appropriate boxes on the answer form, and fill in the corresponding letter ovals.
3. Write your ZID number in the appropriate boxes on the answer form starting at the left end, and fill in the corresponding number ovals.
4. Write your recitation section (01, ..., 08) in the boxes marked "Section". Fill in the appropriate ovals.
5. Fill in the oval corresponding to your Form number (A or B).
6. Write your REGULAR row and set number in the space marked DEPT.
7. There are 20 questions. It is YOUR responsibility to see that you have a complete examination form.
8. There is a copy of the normal curve table at the end of the examination form and some formulas.
9. When you have finished, you are to turn in your answer form, and your signed examination copy. Have your identification card ready.

AA

Problems 1 and 2 use the following:

The new Westlake Mall had a grand opening sale day. A newspaper poll of shoppers showed the following no. of purchases made that day.

Purchases	No. of shoppers
0	3
1	8
2	17
4	17
5	31
6	6

1. What is the median of this data set?
 (a) 3 (b) 17 (c) 31 (d) 4 (e) 5

2. What is the mean of this data set?
- (a) 3.67 (b) 3 (c) 13.67 (d) 5 (e) 4
3. A newspaper reported that an oil spill in the Pacific Ocean is circular in shape with area which is varying indirectly with time. Which of the following is true?
- (a) The circumference of the spill is increasing as time goes on.
(b) The radius of the circular spill is getting longer as time goes on.
(c) The area of the circular spill is getting larger as time goes on.
(d) The area of the spill is getting smaller as time goes on.
(e) The area and the circumference of the spill are both increasing.
4. Joe and Clark each own shares of stock. For a given 5 day period a share of stock in Joe's company is given in dollars by the quantity $1.50 + .75x$ where x is the day. For the same period Clark's stock has the dollar value $2 + .25x$ where x is the day. Which of the following is true?
- (a) A share of Clark's stock was worth less in value at the beginning of the 5 day period than a share of Joe's.
(b) Joe's stock is increasing in value faster than Clark's.
(c) A share of Clark's stock is worth more than a share of Joe's on day 2 of the period.
(d) A share of Clark's stock is always worth less than a share of Joe's.
(e) None of the above.
5. Which of the following is not a characteristic of a normal distribution?
- (a) 50% of the data is less than or equal to the mode.
(b) The graph of the distribution is symmetric about the line $x = \mu$.
(c) The range of the data is about 5σ .
(d) About 95% of the data is between $\mu - 2\sigma$ and $\mu + 2\sigma$.
(e) The mean, median, and mode are identical.

6. Which measure of central tendency would be best to use to represent the data set

$\{33, 46, 44, 162, 55, 38\}$?

- (a) mean
- (b) mode
- (c) quartile deviation
- (d) median
- (e) standard deviation

7. The data set $\{2, 4, 7, 1\}$ has a mean of 3.5. What is its standard deviation?

- (a) 2.29
- (b) 5.25
- (c) 21
- (d) 2
- (e) 1.4

8. A distribution has the following quartile points: $Q_1 = 5.6$, $Q_2 = 7.2$ and $Q_3 = 8.5$. What is the quartile deviation for this set?

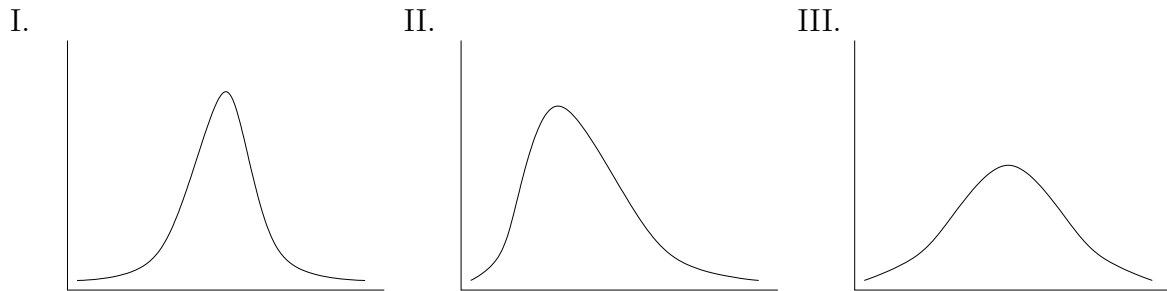
- (a) 2.9
- (b) 1.3
- (c) 5.7
- (d) 1.45
- (e) 1.6

9. Suppose that after 6 quizzes Hal has a mean score of 80 (out of 100). What is the maximum (largest) mean score he could have after the next quiz worth 100 points?

- (a) 90
- (b) 96.67
- (c) 82.86
- (d) 93.33
- (e) 94.29

10. A water park manager in Cypress Falls, Florida, is trying to determine the number of egrets in the park. He has 67 egrets captured, tagged, and released back into their habitat. Later he captures 45 egrets of which 18 were tagged. What estimate will he have for the number of egrets in the park?
- (a) 810 (b) 134 (c) 27 (d) 12 (e) 168
11. Dora had her eye on a house which advertised an asking price of \$212,000. Two weeks later she heard that the owner was willing to sell the house for 15% less. She checked with a local bank and found she would need 12% more than the sale price to cover closing costs. How much money does she need to buy the house?
- (a) \$205,640 (b) \$218,360 (c) \$180,200 (d) \$201,824 (e) \$214,544

12. Consider the frequency distributions below:



Which of the following is true?

- (a) I and III are normal distributions with different standard deviations.
- (b) The standard deviation of III is smaller than the standard deviation of I.
- (c) Only III is a normal distribution.
- (d) I and II are normal distributions with the same mode.
- (e) Only II is a normal distribution.
13. Pizza delivery times recorded by two different shops showed Pop's Pizza has a mean delivery time of 42 minutes with a standard deviation of 4.5 minutes, while Great Pizza has a mean delivery time of 45 minutes with a standard deviation of 5 minutes: Which of the following is true?
- (a) Great Pizza's delivery times are more uniform than Pop's.
- (b) Great Pizza's mean delivery time is less than Pop's.
- (c) Great Pizza and Pop's Pizza's delivery times are equally uniform.
- (d) Pop's Pizza's delivery times are more uniform than those of Great Pizza.
- (e) Pop's mean delivery time is larger than that of Great Pizza.

18. IQ scores are normally distributed with a mean of 100 and a standard deviation of 16. In a city of 20,000 people, how many could be expected to have an IQ less than 87?
- (a) 29
 - (b) 4240
 - (c) 2600
 - (d) 5760
 - (e) 21
19. The probability that a candy machine has change at a given time is .4, and the probability it will work at a given time is .9. What is the probability that the machine will both work and have change at a given time?
- (a) 3.6
 - (b) .13
 - (c) .5
 - (d) 1.3
 - (e) .36
20. Cholesterol levels in men ages 18 to 24 years are normally distributed with a mean of 178 and a standard deviation of 41. What percentage of such men could be expected to have levels between 178 and 190?
- (a) 38.2
 - (b) 49.9
 - (c) 61.8
 - (d) 38.5
 - (e) 11.8