

MATH 101

Rec. no. _____

Test 1

Name: _____

Form B

Signature: _____

Feb. 13, 2002

Student no: _____

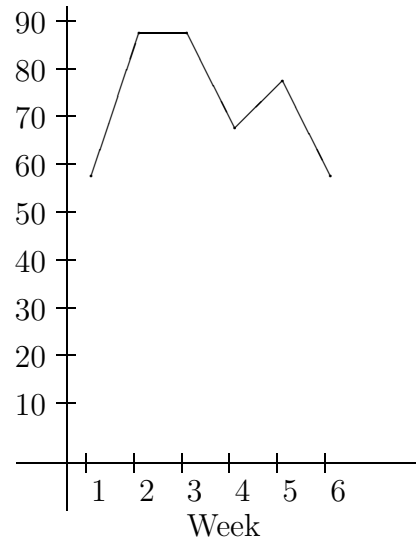
Instructions:

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 social security number in the appropriate boxes on the answer form, and fill in the corresponding number ovals.
4. Fill in the oval for "Form B" on the answer form.
5. There are 20 questions. It is your responsibility to see you have a complete form.
6. Your answer form is to be handed in when you are finished. Have your ID ready.
7. There is a table of normal curve percentages on the last page.

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1. The house prices in the LakeLawn Subdivision have a median of \$112,000 with a quartile deviation of \$17,000. Which of the following statements is FALSE?
 - (a) about one-half the the houses cost \$112,000 or more.
 - (b) about one-half the the houses cost \$112,000 or less.
 - (c) about one-half the the houses cost between \$95,000 and \$129,000.
 - (d) about one-quarter of the houses cost more than \$129,000.
 - (e) about one-quarter of the houses cost less than \$129,000.
 2. What is the median of the following data set? $\{1, 3, 1, 3, 5, 3, 5, 3, 1\}$

(a) 1	(d) 4
(b) 2	(e) 5
(c) 3	
 3. Which average is most sensitive to the extreme or unusual values in a data set?
 - (a) mean
 - (b) median
 - (c) mode
 - (d) standard deviation
 - (e) quartile deviation

Consider the graph at the right which plots the price, in dollars, of a stock over a 6 week period. Over which time interval did the price stay constant?



- 9.
- (a) Week 1 to 2
 - (b) Week 2 to 3.
 - (c) Week 3 to 4.
 - (d) Week 4 to 5.
 - (e) Week 5 to 6.
10. A company wants to study the views of people who study at a large public university. In order to do this, they select, at random, 14 graduate students, 12 seniors, 12 juniors, 15 sophomores and 18 freshmen. This sample may best be described as:
- (a) A simple random sample.
 - (b) A stratified random sample.
 - (c) A judgement sample.
 - (d) A count-recount technique.
 - (e) A census.
11. Which of the following is not a probability?
- (a) 0
 - (b) .16
 - (c) 1
 - (d) 3.14
 - (e) $\frac{1}{3}$

12. Which of the following is false?
- (a) If two quantities vary directly to each other, then a graph relating the two quantities will appear to go downhill from left to right.
 - (b) If two quantities vary inversely to each other, then a graph relating the two quantities will appear to go downhill from left to right.
 - (c) If the relationship between two quantities is graphed, the rate of change of one quantity with respect to the other determines the steepness of the graph.
 - (d) The impact of a graph can be changed by altering the scale of the horizontal axis or the vertical axis.
 - (e) A histogram is sometimes called a bar chart.
13. Which of the following is not a characteristic of a normal distribution
- (a) The graph of the distribution is symmetric about the line $x = \mu$.
 - (b) The mean, median and mode are identical.
 - (c) 50% of the data is greater than or equal to the mean.
 - (d) About 99% of the data is between $\mu - \sigma$ and $\mu + \sigma$.
 - (e) Many naturally occurring quantities, such as the height of black maple trees, are assumed to be normally distributed.
14. The scores on a recent examination in a large mathematics class were normally distributed. The mean score was 95 and the standard deviation was 20. What percentage of the students received a score below 115.
- (a) 2.3%.
 - (b) 34.1%.
 - (c) 65.9%.
 - (d) 84.1%.
 - (e) 97.7%.
15. The OK Flour company sells its semolina flour in 20 pound bags. The mean net weight of these bags is 20 pounds, with a standard deviation of .5 pounds. If the net weights of the bags is normally distributed, then what percentage of the bags have a net weight between 20 and 20.8 pounds?
- (a) 5.5%
 - (b) 22.2%
 - (c) 28.8%
 - (d) 30.8%
 - (e) 44.5%

16. A fashion designer stated that his female models averaged a size 6. Which of the following is TRUE?
- (a) Size 6 is probably the standard deviation of the set of sizes of the models.
 - (b) Size 6 is probably the mode of the set of sizes of the models.
 - (c) Size 6 is probably the median of the set of sizes of the models.
 - (d) Size 6 is probably the mean of the set of sizes of the models.
 - (e) Half of the models wear a size 6 or larger.
17. If there is a 70% chance of snow, then what is the PROBABILITY that it will not snow?
- (a) 70%
 - (b) 0.7
 - (c) 30%
 - (d) 0.3
 - (e) 100%
18. What is the probability of drawing a Jack from a well shuffled (standard, 52 card) deck of cards?
- (a) 1
 - (b) .25
 - (c) .077
 - (d) .019
 - (e) 0
19. Which of the following statements about probability is FALSE?
- (a) An empirical probability is based on experience, or past performance.
 - (b) An *a priori* probability is based on reasoning without resorting to experimentation.
 - (c) A probability is measure of likelihood - 0 probability means “never happens” and a 1 probability means “always happens”.
 - (d) Probabilities vary from 0 to 1.
 - (e) The probability of rolling a 3 on a single die is $\frac{1}{3}$.
20. George has observed the following wait times for getting on line from his ISP.

Wait	1 min.	2 min.	3 min.	4 min.	5 min.
Freq.	8	9	4	6	3

Based on this information what is the probability that he will have to wait 3 minutes or longer to get on line next time?

- (a) 0.13
- (b) 0.3
- (c) 0.43
- (d) 0.57
- (e) 0.7

Below is a portion of the table of normal curve percentages.

z	P	z	P	z	P	z	P
.0	0.0	1.0	34.1	2.0	47.7	3.0	49.9
.1	4.0	1.1	36.4	2.1	48.2	3.1	49.9
.2	7.9	1.2	38.5	2.2	48.6		
.3	11.8	1.3	40.3	2.3	48.9		
.4	15.5	1.4	41.9	2.4	49.2		
.5	19.2	1.5	43.3	2.5	49.4		
.6	22.6	1.6	44.5	2.6	49.5		
.7	25.8	1.7	45.5	2.7	49.7		
.8	28.8	1.8	46.4	2.8	49.7		
.9	31.6	1.9	47.1	2.9	49.8		