

- 1) A health and fitness club surveys 40 randomly selected members and found that the average weight of those questioned is 157 lb. Is this average an example of a statistic or a parameter?

A) Parameter

B) Statistic

- 2) Which of the four levels of measurement is most appropriate for temperatures of the ocean at various depths?

A) Nominal

B) Ordinal

C) Ratio

D) Interval

- 3) An archer is able to hit the bull's-eye 55% of the time. If she shoots 8 arrows, what is the probability that she gets exactly 4 bull's-eyes? Assume each shot is independent of the others.

A) 0.00375

B) 0.263

C) 0.172

D) 0.0915

- 4) An education researcher randomly selects 48 middle schools and interviews all the teachers at each school. Identify which of these types of sampling was used.

A) Systematic

B) Cluster

C) Random

D) Stratified

E) Convenience

- 5) The frequency distribution below summarizes employee years of service for Alpha Corporation. Determine the width of each class.

Years of service	Frequency
1-5	5
6-10	20
11-15	25
16-20	10
21-25	5
26-30	3

A) 10

B) 5

C) 4

D) 6

- 6) A sample of 100 wood and 100 graphite tennis rackets are taken from the warehouse. If 7 wood and 14 graphite are defective and one racket is randomly selected from the sample, find the probability that the racket is wood or defective.

A) 0.105

B) 0.57

C) 0.535

D) There is insufficient information to answer the question.

7) The ages of the members of a gym have a mean of 44 years and a standard deviation of 12 years. What can you conclude from Chebyshev's theorem about the percentage of gym members aged between 26 and 62?

- A) The percentage is at least 55.6%                      B) The percentage is at least 33.3%  
 C) The percentage is approximately 33.3%                      D) The percentage is at most 55.6%

8) A test consists of 10 true/false questions. To pass the test a student must answer at least 6 questions correctly. If a student guesses on each question, what is the probability that the student will pass the test?

- A) 0.172                      B) 0.377                      C) 0.828                      D) 0.205

9) A police department reports that the probabilities that 0, 1, 2, and 3 burglaries will be reported in a given day are 0.45, 0.37, 0.17, and 0.01, respectively. Determine the mean of this probability distribution.

- A)  $\mu = 0.25$                       B)  $\mu = 1.19$                       C)  $\mu = 1.50$                       D)  $\mu = 0.74$

10) For the stem-and-leaf plot below, find the minimum and maximum data values.

Key:  $2|7 = 27$

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1 | 0 5
2 | 6 6 6 7 8 9
2 | 7 7 7 8 8 9 9 9
3 | 0 1 1 2 3 4 4 5
3 | 6 6 6 7 8 8 9
4 | 0 2
  
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- A) min = 20; max = 22                      B) min = 105; max = 402  
 C) min = 10; max = 42                      D) min = 10; max = 12

11) The random variable  $x$  is the number of houses sold by a realtor in a single month at the Sendsom's Real Estate office. Its probability distribution is as follows.

Houses Sold ( $x$ )	Probability $P(x)$
0	0.24
1	0.01
2	0.12
3	0.16
4	0.01
5	0.14
6	0.11
7	0.21

- A)  $\mu = 3.50$                       B)  $\mu = 3.60$                       C)  $\mu = 3.40$                       D)  $\mu = 3.35$

12) The following table contains data from a study of two airlines which fly to Smalltown, USA.

	Number of flights arrived on time	Number of flights arrived late	Totals
Podunk Airlines	33	6	39
Upstate Airlines	43	5	48

- a.) If a flight is selected at random, what is the probability that it was an Upstate Airline flight?
- b.) If a flight is selected at random, what is the probability that it was an Upstate Airline flight or that it arrived on time?
- c.) If a flight is selected at random, what is the probability that it was an Upstate Airline flight given that it arrived on time?
- d.) If a flight is selected at random, what is the probability that it was an Upstate Airline flight and that it arrived on time?

13) A car insurance company has determined that 8% of all drivers were involved in a car accident last year. Among the 14 drivers living on one particular street, 3 were involved in a car accident last year. If 14 drivers are randomly selected, what is the probability of getting 3 or more who were involved in a car accident last year?

A) 0.074

B) 0.096

C) 0.926

D) 0.407

- 14) A medical research team studied the ages of patients who had strokes caused by stress. The ages of 34 patients who suffered stress strokes were as follows.

29 30 36 41 45 50 57 61 28 50 36 58  
 60 38 36 47 40 32 58 46 61 40 55 32  
 61 56 45 46 62 36 38 40 50 27

a.) Compute the mean and standard deviation of this sample.

b.) Construct a frequency distribution for these ages. Use 8 classes beginning with a lower class limit of 25.

Age	Midpoint	Frequency	Relative Frequency	Cumulative Frequency

b.) Draw a histogram representing this data.

**Find the indicated probability. Round to the nearest thousandth.**

- 15) In a batch of 8,000 clock radios 7% are defective. A sample of 5 clock radios is randomly selected without replacement from the 8,000 and tested. The entire batch will be rejected if at least one of those tested is defective. What is the probability that the entire batch will be rejected?

A) 0.304                      B) 0.200                      C) 0.696                      D) 0.0700

## Answer Key

Testname: 2510 MINI-EXAM 1 F16

- 1) B
- 2) D
- 3) B
- 4) B
- 5) B
- 6) B
- 7) A
- 8) B
- 9) D
- 10) C
- 11) B
- 12)  $\frac{43}{48}$

13) B

14)

Age	Frequency
25-29	3
30-34	3
35-39	6
40-44	4
45-49	5
50-54	3
55-59	5
60-64	5

15) A