

Unit Exam I - Practice Exam

Name _____

There are fifteen (15) multiple choice questions. For questions with numerical answers, please select the value closest to the correct answer. Each question is worth three (3) points and you begin with five (5) points for a total of fifty (50) possible points.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the mean for the given sample data.

- 1) Frank's Furniture employees earned the following amounts last week: 1) _____
\$227.64 \$256.14 \$218.04 \$255.74 \$168.58
\$473.25 \$157.20 \$250.72 \$340.18
What was the mean amount earned by an employee last week? Round your answer to the nearest cent.
A) \$254.17 B) \$335.36 C) \$260.83 D) \$293.44

Find the standard deviation for the given data. Round your answer to one more decimal place than the original data.

- 2) Christine is currently taking college astronomy. The instructor often gives quizzes. On the past seven quizzes, Christine got the following scores: 2) _____
53 17 35 24 20 44 68
Compute the standard deviation s.
A) 11,859 B) 35 C) 9731.6 D) 18.8

Solve the problem. Round results to the nearest hundredth.

- 3) The mean of a set of data is 273.02 and its standard deviation is 108.22. Find the z score for a value of 436.70. 3) _____
A) 1.66 B) 1.51 C) 1.81 D) 1.36

Find the z-score corresponding to the given value and use the z-score to determine whether the value is unusual.

- 4) A weight of 232 pounds among a population having a mean weight of 168 pounds and a standard deviation of 25.8 pounds. 4) _____
A) 2.5; unusual B) -2.5; not unusual
C) 2.5; not unusual D) 64.5; unusual

Determine which score corresponds to the higher relative position.

- 5) Which score has a higher relative position, a score of 257.4 on a test for which $\bar{x} = 220$ and $s = 22$, or a score of 89.6 on a test for which $\bar{x} = 80$ and $s = 8$? 5) _____
A) Both scores have the same relative position.
B) A score of 257.4
C) A score of 89.6

Find the percentile for the data point.

- 6) Data set: 124 136 128 122 130 132 122 120 127 124 128 138 120 124 126 121; data point 130 6) _____
A) 62 B) 70 C) 85 D) 75

Find the indicated probability.

- 7) A die with 8 sides is rolled. What is the probability of rolling a number less than 7? 7) _____
 A) $\frac{7}{8}$ B) $\frac{3}{4}$ C) $\frac{1}{8}$ D) 6

- 8) The table below describes the smoking habits of a group of asthma sufferers. 8) _____

	Nonsmoker	Occasional smoker	Regular smoker	Heavy smoker	Total
Men	387	45	90	37	559
Women	421	46	69	34	570
Total	808	91	159	71	1129

If one of the 1129 people is randomly selected, find the probability that the person is a man or a heavy smoker.

- A) 0.558 B) 0.525 C) 0.521 D) 0.492
- 9) A study conducted at a certain college shows that 63% of the school's graduates find a job in their chosen field within a year after graduation. Find the probability that among 6 randomly selected graduates, at least one finds a job in his or her chosen field within a year of graduating. 9) _____
 A) 0.937 B) 0.630 C) 0.997 D) 0.167

- 10) The table below shows the soft drinks preferences of people in three age groups. 10) _____

	cola	root beer	lemon-lime
under 21 years of age	40	25	20
between 21 and 40	35	20	30
over 40 years of age	20	30	35

If one of the 255 subjects is randomly selected, find the probability that the person drinks root beer given that they are over 40.

- A) $\frac{2}{5}$ B) $\frac{6}{17}$
 C) $\frac{2}{17}$ D) None of the above is correct.

Find the mean of the given probability distribution.

- 11) The number of golf balls ordered by customers of a pro shop has the following probability distribution. 11) _____

x	3	6	9	12	15
p(x)	0.14	0.02	0.36	0.38	0.10

- A) 7.68 B) 9 C) 7.17 D) 9.84

Solve the problem.

- 12) Find the variance for the given probability distribution. 12) _____

x	P(x)
0	0.05
2	0.17
4	0.43
6	0.35

- A) 2.85 B) 2.44 C) 1.56 D) 1.69

- 13) Suppose you pay \$1.00 to roll a fair die with the understanding that you will get back \$3.00 for rolling a 5 or a 1, nothing otherwise. What is your expected value? 13) _____
- A) -\$1.00 B) \$0.00 C) \$3.00 D) \$1.00

Assume that a procedure yields a binomial distribution with a trial repeated n times. Use the binomial probability formula to find the probability of x successes given the probability p of success on a single trial.

- 14) $n = 10, x = 2, p = \frac{1}{3}$ 14) _____
- A) 0.1951 B) 0.0028 C) 0.2156 D) 0.1929

Find the indicated probability.

- 15) A company purchases shipments of machine components and uses this acceptance sampling plan: Randomly select and test 30 components and accept the whole batch if there are fewer than 3 defectives. If a particular shipment of thousands of components actually has a 3% rate of defects, what is the probability that this whole shipment will be accepted? 15) _____
- A) 0.1669 B) 0.0482 C) 0.5389 D) 0.9399

Answer key to Practice Exam I:

1. C
2. D
3. B
4. A
5. B
6. D
7. B
8. B
9. C
10. B
11. D
12. A
13. B
14. A
15. D