Practice Final part 2 Math 160

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

Provide an appropriate response.

1) State whether the variable is discrete or continuous. 1) _____
The height of a player on a basketball team
A) discrete B) continuous

2) State whether the variable is discrete or continuous. 2) _____
The cost of a Statistics textbook
A) discrete B) continuous

3) The random variable x represents the number of cars per household in a town of 1000 households. 3) _____
Find the probability of randomly selecting a household that has less than two cars.

Cars	Households
0	125
1	428
2	256
3	108
4	83

A) 0.809 B) 0.125 C) 0.428 D) 0.553

4) The random variable x represents the number of credit cards that adults have along with the corresponding probabilities. Find the mean and standard deviation. 4) _____

x	P(x)
0	0.07
1	0.68
2	0.21
3	0.03
4	0.01

A) mean: 1.23; standard deviation: 0.44 B) mean: 1.30; standard deviation: 0.32
C) mean: 1.30; standard deviation: 0.44 D) mean: 1.23; standard deviation: 0.66

5) A test consists of 90 multiple choice questions, each with five possible answers, only one of which is correct. Find the mean and the standard deviation of the number of correct answers. 5) _____
A) mean: 45; standard deviation: 6.71 B) mean: 18; standard deviation: 4.24
C) mean: 18; standard deviation: 3.79 D) mean: 45; standard deviation: 3.79

6) A test consists of 10 multiple choice questions, each with five possible answers, one of which is correct. To pass the test a student must get 60% or better on the test. If a student randomly guesses, what is the probability that the student will pass the test? 6) _____
A) 0.205 B) 0.006 C) 0.377 D) 0.060

7) Assume that male and female births are equally likely and that the birth of any child does not affect the probability of the gender of any other children. Find the probability of at most three boys in ten births. 7) _____
A) 0.300 B) 0.172 C) 0.003 D) 0.333

8) Find the area under the standard normal curve to the right of $z = -1.25$. 8) _____

A) 0.8944 B) 0.6978 C) 0.7193 D) 0.5843

Provide an appropriate response. Use the Standard Normal Table to find the probability.

9) The lengths of pregnancies of humans are normally distributed with a mean of 268 days and a standard deviation of 15 days. Find the probability of a pregnancy lasting less than 250 days. 9) _____

A) 0.1591 B) 0.0606 C) 0.0066 D) 0.1151

10) The distribution of cholesterol levels in teenage boys is approximately normal with $\mu = 170$ and $\sigma = 30$ (Source: U.S. National Center for Health Statistics). Levels above 200 warrant attention. Find the probability that a teenage boy has a cholesterol level greater than 200. 10) _____

A) 0.3419 B) 0.2138 C) 0.8413 D) 0.1587

Provide an appropriate response.

11) Compare the scores: a score of 220 on a test with a mean of 200 and a standard deviation of 21 and a score of 90 on a test with a mean of 80 and a standard deviation of 8. 11) _____

A) A score of 90 with a mean of 80 and a standard deviation of 8 is better.
B) You cannot determine which score is better from the given information.
C) A score of 220 with a mean of 200 and a standard deviation of 21 is better.
D) The two scores are statistically the same.

12) Assume that the heights of women are normally distributed with a mean of 64.9 inches and a standard deviation of 1.6 inches. Find Q_3, the third quartile that separates the bottom 75% from the top 25%. 12) _____

A) 63.8 B) 66.0 C) 66.9 D) 66.7

13) Assume that the heights of women are normally distributed with a mean of 63.6 inches and a standard deviation of 2.5 inches. If 100 women are randomly selected, find the probability that they have a mean height greater than 63.0 inches. 13) _____

A) 0.8989 B) 0.0082 C) 0.9918 D) 0.2881

14) The lengths of pregnancies are normally distributed with a mean of 268 days and a standard deviation of 15 days. If 64 women are randomly selected, find the probability that they have a mean pregnancy between 266 days and 268 days. 14) _____

A) 0.2881 B) 0.7881 C) 0.3577 D) 0.5517

15) A random sample of 120 students has a test score average Assume a population standard deviation of 11.4. Find the margin of error if $c = 0.90$. 15) _____

A) 0.16 B) 0.94 C) 1.04 D) 1.71

16) Find the critical value z_c that corresponds to a 94% confidence level. 16) _____

A) ±1.88 B) ±1.645 C) ±2.33 D) ±1.96

17) A random sample of 40 students has a mean annual earnings of \$3120.A previous study had a population standard deviation of \$677. Construct the confidence interval for the population mean, μ if $c = 0.95$. 17) _____

A) (\$2910, \$3330) B) (\$1987, \$2346) C) (\$210, \$110) D) (\$4812, \$5342)

18) In order to set rates, an insurance company is trying to estimate the number of sick days that full time workers at an auto repair shop take per year. A previous study indicated that the standard deviation was 2.8 days. How large a sample must be selected if the company wants to be 95% confident that the true mean differs from the sample mean by no more than 1 day? 18) _____

A) 31 B) 1024 C) 141 D) 512

19) Find the critical value, t_c, for c = 0.95 and n = 16. 19) _____

A) 2.131 B) 2.947 C) 2.602 D) 2.120

20) Find the value of E, the margin of error, for c = 0.99, n = 15 and s = 5.7. 20) _____

A) 3.86 B) 4.38 C) 4.49 D) 1.13

21) In a random sample of 28 families, the average weekly food expense was $95.60 with a standard deviation of $22.50. Determine whether a normal distribution or a t–distribution should be used or whether neither of these can be used to construct a confidence interval. Assume the distribution of weekly food expenses is normally shaped. 21) _____

A) Cannot use normal distribution or t–distribution.
B) Use normal distribution.
C) Use the t–distribution.

22) A survey of 100 fatal accidents showed that 44 were alcohol related. Find a point estimate for p, the population proportion of accidents that were alcohol related. 22) _____

A) 0.786 B) 0.44 C) 0.306 D) 0.56

23) A survey of 280 homeless persons showed that 63 were veterans. Construct a 90% confidence interval for the proportion of homeless persons who are veterans. 23) _____

A) (0.176, 0.274) B) (0.167, 0.283) C) (0.184, 0.266) D) (0.161, 0.289)

Answer Key
Testname: PRACTICEFINALC4_6

1) B
2) A
3) D
4) D
5) C
6) B
7) B
8) A
9) D
10) D
11) A
12) B
13) C
14) C
15) D
16) A
17) A
18) A
19) A
20) B
21) C
22) B
23) C