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You have 40 questions. You have 120 minutes to solve the exam. Please mark all your answers on the answer sheet provided to you. Make sure that the answer sheet form matches the question form. You have to submit both question paper and answer sheet but **only answer sheets will be graded**. Good luck

Choose the **best answer** for each of the following questions:

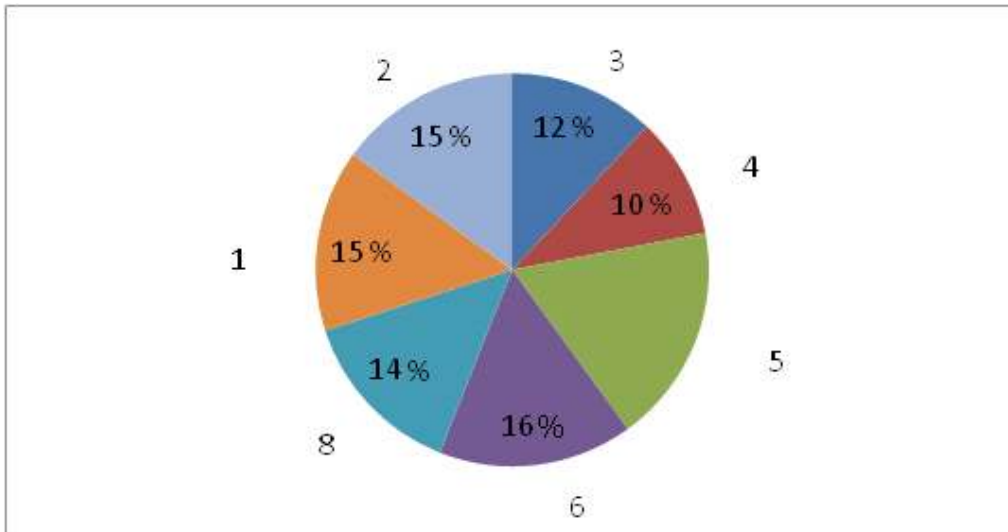
Use the following to answer questions 1-3:

x	-8	2	4
$P(x)$	0.33	p	0.12

- The mean of the distribution is equal to ...
A) -0.666667 B) -1.06 C) 1 D) -2.16
- The sample size is ...
A) 3 B) 1 C) Cannot be determined D) -2
- The value of p is equal to ...
A) 0.88 B) 0.55 C) 0.67 D) 0
- If the variance of a probability distribution is 23.4, what is the standard deviation?
A) 11.7 B) 4.837355 C) 547.56 D) 46.8
- If a set of 13 numbers has standard deviation 16, then it's variance is ...
A) 4.44. B) 1.23. C) 4.00. D) 256.00.
- What type of distributions is the normal distribution?
A) Discrete. C) Continuous.
B) Neither discrete nor continuous. D) Discrete and continuous.
- A researcher wishes to select the top 14% of students for his study. If the grades of students is normally distributed with mean 85 and standard deviation 9, the lowest grade that allows a student to participate in the study is ...
A) 88.61 B) 94.72 C) 74.23 D) 81.4
- In a certain school, it is known that 33% of instructors are using e-mail to send messages. For a sample of 12 instructors, find the probability that exactly 6 of them are using e-mail.
A) 0.892055 B) 0.33 C) 0.107945 D) 0.5
- One hundred students are selected randomly from 1000 students using a computer random generation numbers. The sampling method is ...
A) stratified B) random C) cluster D) systematic

10. The probability is 0.8 that a person shopping at a certain store will spend **less** than \$200. For a group of size 55, find the mean number of customers who spend **more** than \$200.
A) 55 B) 68.75 C) 44 D) 11

Use the following to answer questions 11-13:



11. The cumulative percentage for the third part is ...
A) 52% B) 30% C) 42% D) 15%
12. The degree of the third part is ...
A) 57.6 B) 54 C) 43.2 D) 36
13. The missing percentage is ...
A) 15% B) 17% C) 16% D) 18%

Use the following to answer questions 14-17:

In a medical study, the mean systolic blood pressure is 117 and the standard deviation is 6.

14. The probability that the mean of systolic blood pressure for a sample of 55 patients will be less than 118 is ...
A) 0.4325 B) 0.8925 C) 0.1075 D) 0.5675
15. The probability that a person will have a systolic blood pressure more than 117 is ...
A) -0.5 B) 0.4299 C) 0.5 D) 0
16. The probability that a person will have a systolic blood pressure greater than 120 is ...
A) 0.1915 B) 0.8085 C) 0.6915 D) 0.3085
17. The probability that a person will have a systolic blood pressure between 115 and 120 is ...
A) -0.3208 B) 0.6915 C) 0.3208 D) 0.3707

Use the following to answer questions 18-19:

The medal distribution from the 2004 Olympics Games for top countries is shown below:

Countries	Gold	Silver	Bronze	Total
United States	35	39	29	103
Russia	27	27	38	92
China	32	17	14	63
Australia	17	16	16	49
Others	133	136	153	422
Total	244	235	250	729

18. The probability that the winner was from Australia, given that he won a gold medal is ...
A) 0.1107. B) 0.0697. C) 0.1311. D) 0.1434.
19. The probability that the winner won the gold medal, given that the winner was from the United States is ...
A) 0.3469. B) 0.5079. C) 0.3398. D) 0.2935.
20. A company manufactures batteries in groups of 26 and there is a 16% rate of defects. Find the standard deviation for the number of defects per group.
A) 186.933 B) 34944 C) 3.494 D) 1.869
21. The braking time of a car is example of ... variable.
A) ordinal B) continuous C) nominal D) discrete
22. The mode is one of the measures of ...
A) dispersion. B) skewing. C) correlation. D) central tendency.
23. A correlation coefficient of 0.78 would mean that ...
A) the values of x increase as the values of y decrease.
B) the values of x increase as the values of y increase.
C) the values of x decrease as the values of y increase.
D) there is no relationship between x and y.
24. How many 6-digit numbers can be formed using the digits 0, 1, 2, 3, 4, 5, 6, 7 if repetition of digits is not allowed?
A) 28 B) 20160 C) 7 D) 5040
25. All the following are the measures of central tendency EXCEPT the ...
A) median. B) midrange. C) range. D) mean.
26. The mean of a normal probability distribution is 532 and the standard deviation is 5. About 95 percent of the observations lie between what two values?
A) 512 and 552 B) 527 and 537 C) 522 and 542 D) 517 and 547
27. Describe which measure of position was probably used "One-half of the factory workers make more than \$10 per hour."
A) IQR B) Q2 C) Q1 D) Q3

28. Choosing 7 people (without replacement) from a group of 35 people, of which 15 are women, keeping track of the number of men chosen. Then, the procedure ...
- A) does not result in a binomial distribution because there are more than two outcomes for each trial.
 B) results in a binomial distribution.
 C) does not result in a binomial distribution because the trials are not independent.
 D) does not result in a binomial distribution because there are too many trials.
29. An airline estimates that 98% of people booked on their flights actually show up. If the airline books 81 people on a flight for which the maximum number is 79, what is the probability that the number of people who show up will exceed the capacity of the plane?
 A) 0.194676 B) 0.516487 C) 0.483513 D) 0.321811
30. The range of the data set (4, -5, 0, 6, -10) is ...
 A) 6 B) 16 C) 14 D) -14
31. The type of graph that represents the data by using vertical bars of various heights to indicate frequencies is ...
 A) pie graph B) time series graph C) histogram D) stem and leaf plot
32. If the equation for the regression line is $y = -2x + 5$, then the sign of the correlation coefficient between the two variables ...
 A) is positive. B) can not be determined, C) is -2. D) is negative.

Use the following to answer questions 33-35:

The blood type of a sample of 111 patients are shown in the following table:

Blood Type	No. of patients
A	16
B	24
AB	50
O	21
Total	111

33. The type of data is ...
 A) discrete. B) nominal. C) ordinal. D) continues.
34. The range ...
 A) Cannot be calculated B) is 22.5. C) is 8. D) is 16.
35. The mode ...
 A) is 111. B) Cannot be calculated. C) is blood type AB. D) is 50.
36. A contractor is considering a sale that promises a profit of \$52823 with a probability of 0.6 or a loss (due to bad weather, strikes, and such) of \$16928 with a probability of 0.4. What is the expected profit?
 A) \$38465. B) \$14765.8. C) \$24922.6. D) \$31693.8.
37. A gardener has 43 clients, 24% of whom are businesses. Find the number of business clients.
 A) 1032 clients. B) 43 clients. C) 10 clients. D) 24 clients.

- 38.** A class consists of 56 women and 59 men. If a student is randomly selected, what is the probability that the student is a man?
A) 0.0179 **B)** 0.513 **C)** 0.487 **D)** 0.0169
- 39.** If the probability that a new drug will be successful is 0.898, then the probability that it will not be successful is ...
A) 0.898. **B)** 0.102. **C)** 1. **D)** 0.
- 40.** The standard deviation of the sample means will be ... the standard deviation of the population.
A) smaller than **B)** equal to **C)** larger or smaller than **D)** larger than

Good luck
Stat 110 Team

Answer Key

1. B
2. C
3. B
4. B
5. D
6. C
7. B
8. C
9. B
10. D
11. C
12. C
13. D
14. B
15. C
16. D
17. C
18. B
19. C
20. D
21. B
22. D
23. B
24. B
25. C
26. C
27. B
28. C
29. B
30. B
31. C
32. D
33. B
34. A
35. C
36. C
37. C
38. B
39. B
40. A