1. Upon visiting a newly opened Starbucks store, customers were given a brief survey. One of the questions on the survey was "What was the actual cost of your purchase today?" What is the level of measurement for the answer to this questions?
   - A. Nominal
   - B. Ordinal
   - C. Interval
   - D. Ratio
   - E. Quantitative (continuous)

2. In constructing a frequency polygon, which of the following are scaled on the Y axis (vertical axis)?
   - A. Class midpoints
   - B. Class frequencies
   - C. Class intervals
   - D. Line segments
   - E. Number of classes

3. There are three children in a room, ages "three, four, and five". If a four-year-old child enters the room
   - A. the mean age will stay the same but the standard deviation will decrease
   - B. the mean age will stay the same but the standard deviation will increase
   - C. the mean age and standard deviation will increase
   - D. the mean age and standard deviation will stay the same
   - E. the mean age and standard deviation will decrease

4. A publisher receives a copy of a 500-page textbook from a printer. The page proofs are carefully read and the number of errors on each page is recorded, producing the data in the following table:

Number of errors	0	1	2	3	4	5
Number of pages	102	138	140	79	33	8

What is the mean number of errors per page?

   - A. 1.654
   - B. 100
   - C. 4.8
   - D. 51.5
   - E. 140

5. What is the average annual growth rate if sales have grown 25% over 5 years?
   - A. 5%
   - B. 1.25%
   - C. 125%
   - D. 4.6%
   - E. Cannot be determined

6. A random sample of data has a mean of 75 and a variance of 25. According to Chebyshev's theorem, at least what percent of the observations are between 65 and 85?
   A. 95%
   B. 5%
   C. 75%
   D. 25%
   E. Cannot be determined

7. Find the 56th percentile.

15.42	6.02	6.67	7.30	7.59	12.71	8.81	8.35	13.89	9.45
9.61	10.37	10.39	11.86	12.22	7.99	13.07	13.59	8.81	5.24

   A) 10.19
   B) 11.76
   C) 9.61
   D) 9.76
   E) 11.2

8. An investor is considering three strategies for a $1,000 investment. The probable returns are estimated as follows:
   Strategy 1: A profit of $2,000 with probability 0.15 and a loss of $1,000 with probability 0.85.
   Strategy 2: A profit of $1,000 with probability 0.50, a profit of $500 with probability 0.30, and a loss of $500 with probability 0.20.
   Strategy 3: A certain profit of $400.
   Which strategy has the highest expected profit?

   A. Strategy 1
   B. Strategy 2
   C. Strategy 3
   D. Strategies 1 and strategy 3 are equivalent
   E. Strategies 1 and strategy 2 are equivalent

9. It was estimated that 30% of all seniors on a campus were seriously concerned about employment prospects, 25% were seriously concerned about grades, and 20% were seriously concerned about both.
   What is the probability that a randomly chosen senior from this campus is seriously concerned about at least one of these two things?

   A. 0.80
   B. 0.45
   C. 0.55
   D. 0.25
   E. 0.35

10. A bank classifies borrowers as high risk or low risk. Only 15% of its loans are made to those in the high risk category. Of all its loans, 5% are in default, and 40% of those in default were made to high-risk borrowers. What is the probability that a high-risk borrower will default?
   A. 0.13
   B. 0.50
   C. 0.06
   D. 0.375
   E. 0.55

11. The number of accidents in a production facility has a Poisson distribution with a standard deviation of 2 per month. For a given month, what is the probability there will be fewer than 2 accidents?
   A. 0.41
   B. 0.57
   C. 0.09
   D. 0.07
   E. 0.27

12. A committee of 4 members is to be formed from a group of 48 men and 40 women. If the choice of committee members is made randomly, what is the probability that precisely half of these members will be women? (Use binomial distribution approximation to hypergeometric.)
   A. 0.377
   B. 0.369
   C. 0.061
   D. 0.500
   E. 0.833

13. A soccer team won 75.7% of its games. Find the probability that the team will win at least 8 out of the next 10 games.
   A. 0.29
   B. 0.71
   C. 0.26
   D. 0.55
   E. 0.61

14. A company receives a shipment of 20 items. Because inspection of each individual item is expensive, it has a policy of checking a random sample of 6 items from such a shipment, and if no more than 1 sampled item is defective, the remainder will not be checked. What is the probability that a shipment of 5 defective items will not be subjected to additional checking?
      A. 0.39
      B. 0.13
      C. 0.61
      D. 0.87
      E. 0.52

15. The incomes of all families in a particular suburb can be represented by a continuous random variable. It is known that the median income for all families in this suburb is $60,000 and that 40% of all families in the suburb have incomes above $72,000. For a randomly chosen family, what is the probability that its income will be between $60,000 and $72,000?
      A. 0.60
      B. 0.10
      C. 0.40
      D. 0.83
      E. Cannot be determined

16. According to the Insurance Institute of America, a family of four spends a maximum of $3,800 per year on all types of insurance and half of these families spend less than $2,100 Suppose the money spent is uniformly distributed. If we select a family at random, what is the probability they spend less than $2,000 per year on insurance per year?
      A. 0
      B. 1
      C. 0.47
      D. 0.53
      E. Cannot be determined

17. Scores on an economics test follow a normal distribution. What is the probability that a randomly selected student will achieve a score that exceeds the mean score by more than 1.5 standard deviations?
      A. 0.0668
      B. 0.5668
      C. 0.4332
      D. 0.9332
      E. 0.0596

18. The tread life of Road Stone tires has a normal distribution with a mean of 35,000 miles and a standard deviation of 4,000 miles. What proportion of these tires has a tread life of between 32,000 and 38,000 miles?
    A. 0.7500
    B. 0.2734
    C. 0.7266
    D. 0.2266
    E. 0.5468

19. A car-rental company has determined that the probability a car will need service work in any given month is 0.2. The company has 900 cars. What is the probability that more than 200 cars will require service work in a particular month?
    A. 0.0475
    B. 0.0516
    C. 0.0557
    D. 0.0436
    E. 0.4443

20. A new television series is to be shown. A broadcasting executive feels that his uncertainty about the rating that the show will receive in its first month can be represented by a normal distribution with a mean of 18.2 and a standard deviation of 1.5. According to this executive, the probability is 0.1 that the rating will be less than what number?
    A. 16.28
    B. 20.12
    C. 18.35
    D. 18.05
    E. 16.70