

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

- 1) The approximate measure of the angle that represents 40 out of 100 responses in a pie chart is
A) 216° . B) 144° . C) 60° . D) 40° .
- 2) Find the median of the numbers: 35 38 29 42
A) 35.5 B) 73 C) 36.5 D) 36
- 3) The first quartile (Q_1) is
A) the median of the numbers less than the median of a set of data.
B) the same as the frequency of the first category in a histogram.
C) the average of the two smallest numbers in a set of data.
D) the smallest number in a set of data.
- 4) A five-number summary for a box plot includes which of the following?
A) min, median, max, average, frequency total B) Q_1, Q_2, Q_3, Q_4 , total
C) Q_1, Q_2, Q_3, Q_4 , average D) min, Q_1, Q_2, Q_3 , max
- 5) Given the following five-number summary, find the interquartile range.
29, 37, 50, 66, 94
A) 29 B) 50 C) 65 D) 32.5
- 6) The manager of a small retail store counted the number of sales each hour during a 60-hour week. The frequency distribution is given below.

Number of sales during hour	Number of occurrences
6	25
7	20
8	10
9	0
10	5

The relative frequency of seven sales during an hour is

- A) $\frac{1}{3}$.
B) $\frac{7}{40}$.
C) $\frac{7}{60}$.
D) $\frac{1}{4}$.
E) none of the above

7) The manager of a small retail store counted the number of sales each hour during a 60-hour week. The frequency distribution is given below.

Number of sales during hour	Number of occurrences
6	25
7	20
8	10
9	0
10	5

The average number of sales during an hour is

- A) $8\frac{1}{2}$.
- B) 6.
- C) 7.
- D) 8.
- E) none of the above

8) Which of the following can be a probability distribution for the random variable X ?

A)

k	$\Pr(X = k)$
-3	$\frac{1}{12}$
1	$\frac{5}{12}$
4	$\frac{1}{3}$

B)

k	$\Pr(X = k)$
-2	$\frac{1}{3}$
0	$\frac{5}{12}$
1	$\frac{1}{4}$

C)

k	$\Pr(X = k)$
0	$\frac{1}{6}$
1	$\frac{5}{2}$
3	$\frac{2}{3}$

D)

k	$\Pr(X = k)$
1	$\frac{1}{3}$
2	$-\frac{1}{6}$
3	$\frac{5}{6}$

9) Let X denote the number of boys in a family with four children. $\Pr(X \geq 3)$ is

- A) $\frac{11}{16}$.
- B) $\frac{5}{16}$.
- C) $\frac{2}{3}$.
- D) $\frac{1}{4}$.
- E) none of the above

10) A church sells 2000 lottery tickets on a new car worth \$7000. Each ticket costs \$5. If you buy one ticket, your expected winning is

A) $\frac{7}{2}$.

B) $-\frac{3}{2}$.

C) $-\frac{1999}{400}$.

D) $-\frac{599}{400}$.

E) none of the above

11) Consider the probability distribution below:

k	$\Pr(X = k)$
-10	0.2
20	0.6
25	0.2

The mean is

A) 25.

B) 20.

C) 15

D) 35

E) none of the above

12) Consider the probability distribution below:

k	$\Pr(X = k)$
-10	0.2
20	0.6
25	0.2

The variance is

A) 140

B) 35

C) 160

D) 200

E) none of the above

13) A certain probability distribution has mean 100 and variance 5. The standard deviation is

A) $\sqrt{5}$.

B) 20.

C) 500.

D) 25.

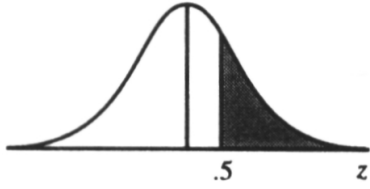
E) none of the above

- 14) Suppose that a probability distribution has mean 20 and standard deviation 3. The Chebychev inequality states that the probability that an outcome lies between 16 and 24 is
- A) at least $\frac{1}{4}$.
 - B) at most $\frac{1}{4}$.
 - C) less than $\frac{7}{16}$.
 - D) at least $\frac{7}{16}$.
 - E) none of the above
- 15) If Z is the standard normal random variable, then $\Pr(Z \leq 0.5)$ is
- A) 0.7723
 - B) 0.6915.
 - C) 0.3085
 - D) .2277
 - E) none of the above
- 16) If Z is the standard normal random variable, then $\Pr(Z \geq 0.6)$ is
- A) 0.7257.
 - B) 0.2743.
 - C) 0.2254.
 - D) 0.5987.
 - E) none of the above
- 17) If X is the standard normal random variable, then $\Pr(-1.5 \leq X \leq 0)$ is
- A) 0.0668.
 - B) 0.5000.
 - C) 0.4332.
 - D) 0.9332.
 - E) none of the above
- 18) If X is the standard normal random variable, then $\Pr(-1.5 \leq X \leq 1.5)$ is
- A) 0.8664
 - B) 0.0668
 - C) 0.9332
 - D) 0.5000.
 - E) none of the above
- 19) The lifetimes of a certain model of television's picture tubes are normally distributed with $\mu = 48$ months and $\sigma = 8$ months. The manufacturer wants to issue a warranty that will be written so that about 92% of the picture tubes will outlast the warranty. For how many months should the picture tubes be guaranteed?
- A) 44.16
 - B) 59.20
 - C) 36.80
 - D) 40.64
 - E) none of the above

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use a table to find the area of the shaded regions under the standard normal curve.

20)



Find the value of z for which the area of the shaded region under the standard normal curve is given.

21)

