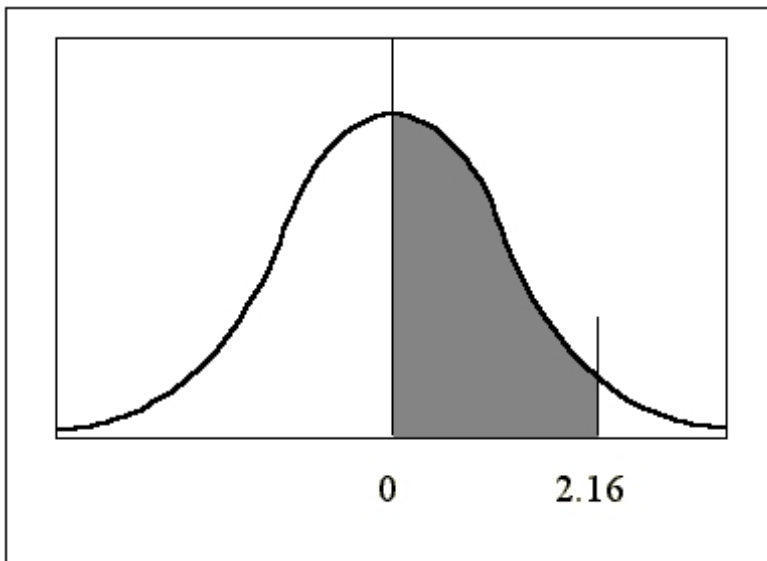


MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

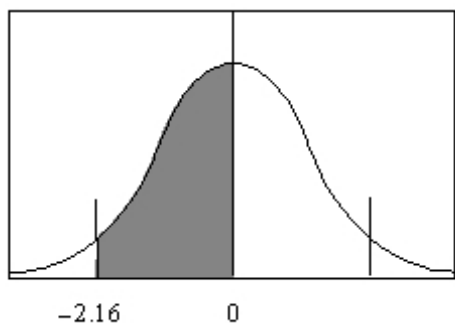
- 1) Which choice is another term that can be used to describe a normal distribution: 1) _____
A) bell curve B) negatively or positively skewed
C) independent variable D) discrete distribution
- 2) The normal distribution curve can be used as a probability distribution curve for normally distributed variables. 2) _____
A) True B) False
- 3) If a normal distribution has a mean of 35 and a standard deviation of 10, then 3) _____
A) the median is 25 and the mode is 45.
B) the median is 35 and the mode is 35.
C) the median is 45 and the mode is 25.
D) the median is 35 and the mode is 45.
- 4) Which of the following properties distinguishes the standard normal distribution from other normal distributions? 4) _____
A) The total area under the curve is equal to 1.00.
B) The mean is 0 and the standard deviation is 1.
C) The curve is continuous.
D) The mean is located at the center of the distribution.
- 5) One normal curve has a mean of 24 and a standard deviation of 3. A second normal curve has a mean of 3 and a standard deviation of 24. The curve that is more dispersed, or spread out, is 5) _____
A) neither; by definition, a normal curve shows no spread.
B) the first normal curve.
C) the second normal curve.
D) both; they are equally spread out.
- 6) The number of standard deviations a particular X value is from the mean is commonly referred to as _____. 6) _____
A) $P(X)$ B) μ C) σ^2 D) z
- 7) The area under the normal distribution curve that lies within three standard deviations of the mean is approximately 95%. 7) _____
A) False B) True

8) Find the area under the standard normal distribution curve between $z = 0$ and $z = 2.16$. 8) _____



- A) 0.4846 B) 0.3708 C) 0.9846 D) 2.1600

9) Find the area under the standard normal distribution curve between $z = 0$ and $z = -2.16$. 9) _____

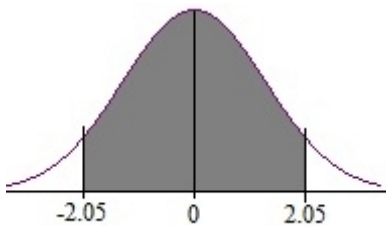


- A) 0.4846 B) -2.1600 C) 0.9846 D) 0.3708

10) The area under the standard normal distribution curve to the right of $z = 1.83$ is 0.4664. 10) _____

- A) True B) False

11) Find the area under the standard normal distribution curve between $z = -2.05$ and $z = 2.05$. 11) _____



- A) 0.4938 B) 0.4798 C) 0.9876 D) 0.9596

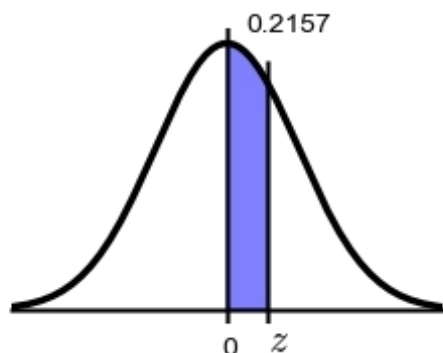
12) The probability $P(0 < z < 0.97)$ is 0.3340.

A) True

B) False

12) _____

13) Find the z value that corresponds to the given area.



A) 0.27

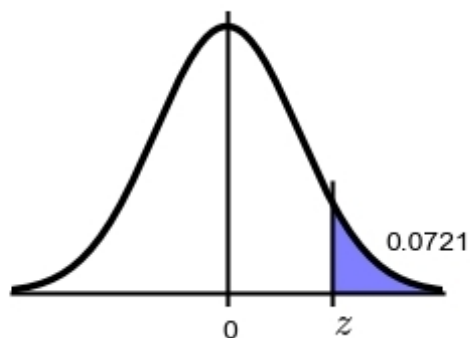
B) -0.79

C) 0.44

D) 0.57

13) _____

14) Find the z value that corresponds to the given area.



A) -1.46

B) 0.07

C) 1.46

D) 1.23

14) _____

15) Find the z -score for which the area to the left is 0.13.

A) -1.13

B) -1.40

C) -1.01

D) -0.87

15) _____

16) Find the area under the standard normal curve that lies outside the interval between $z = -0.6$ and $z = 1.8$.

A) 0.6898

B) 0.3102

C) 0.4641

D) 0.5359

16) _____

17) The area under a normal distribution curve is always positive even if the z value is negative.

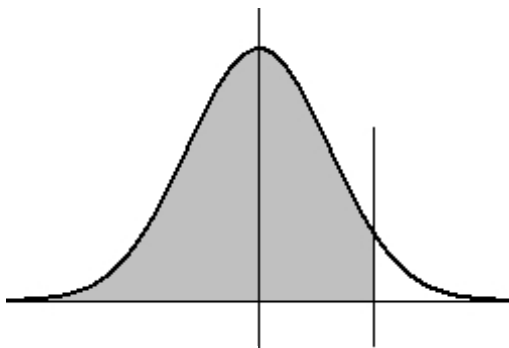
A) False

B) True

17) _____

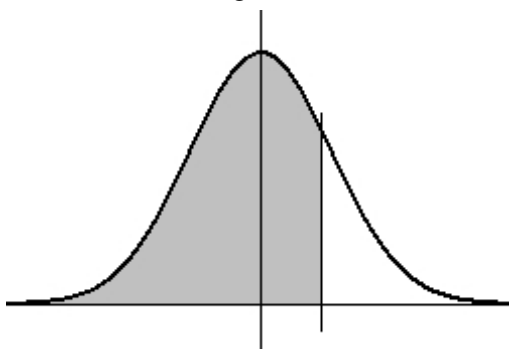
- 18) In a standard normal distribution, what z value corresponds to 17% of the data between the mean and the z value? 18) _____
A) 0.52 B) 1.25 C) 2.10 D) 0.44
- 19) If a normally distributed group of test scores have a mean of 70 and a standard deviation of 12, find the percentage of scores that will fall below 50. 19) _____
A) 4.75% B) 35.54% C) 45.25% D) 6.75%
- 20) A normal population has a mean $\mu = 40$ and standard deviation $\sigma = 11$. What proportion of the population is between 24 and 32? 20) _____
A) 0.8408 B) 0.0735 C) 0.1592 D) 0.2327
- 21) A normal population has a mean $\mu = 33$ and standard deviation $\sigma = 9$. What is the probability that a randomly chosen value will be greater than 44? 21) _____
A) 0.8554 B) 0.6915 C) 0.1112 D) 0.8888
- 22) At a large department store, the average number of years of employment for a cashier is 5.7 with a standard deviation of 1.8 years, and the distribution is approximately normal. If an employee is picked at random, what is the probability that the employee has worked at the store for over 10 years? 22) _____
A) 99.2% B) 1.7% C) 49.2% D) 0.8%
- 23) The average length of crocodiles in a swamp is 11.5 feet. If the lengths are normally distributed with a standard deviation of 1.7 feet, find the probability that a crocodile is more than 11 feet long. 23) _____
A) 0.38 B) 0.62 C) 0.88 D) 0.12
- 24) The average hourly wage of workers at a fast food restaurant is \$6.50/hr. Assume the wages are normally distributed with a standard deviation of \$0.45. If a worker at this fast food restaurant is selected at random, what is the probability that the worker earns more than \$6.75? 24) _____
A) 42.1% B) 5.2% C) 27.6% D) 28.8%
- 25) The average height of flowering cherry trees in a certain nursery is 10.5 feet. If the heights are normally distributed with a standard deviation of 1.5 feet, find the probability that a tree is less than 12.5 feet tall. 25) _____
A) 0.73 B) 0.96 C) 0.82 D) 0.91

- 26) X is a normally distributed random variable with a mean of 7.0 and a standard deviation of 3.00. Find the value x such that $P(X < x)$ is equal to 0.86. (Note: the diagram is not necessarily to scale.) 26) _____



- A) 8.14 B) 7.00 C) 11.63 D) 10.24

- 27) X is a normally distributed random variable with a mean of 11.00. If the probability that X is less than 11.88 is 0.67 (as shown below), then what is the standard deviation of X ? (Note: the diagram is not necessarily to scale.) 27) _____

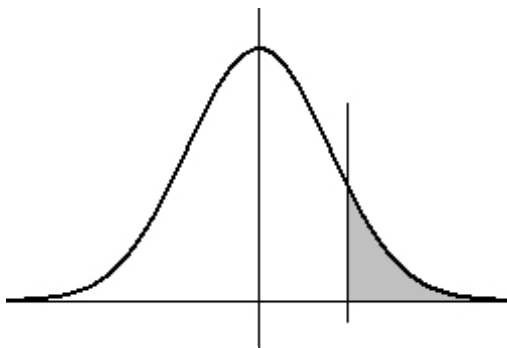


- A) 1.00 B) 4.00 C) 2.40 D) 2.00

- 28) In order to be accepted into a certain top university, applicants must score within the top 5% on the SAT exam. Given that the exam has a mean of 1000 and a standard deviation of 200, what is the lowest possible score a student needs to qualify for acceptance into the university? 28) _____

- A) 1100 B) 1330 C) 1250 D) 1400

29) X is a normally distributed random variable with a standard deviation of 2.00. Find the mean of X if 12.71% of the area under the distribution curve lies to the right of 10.28. 29) _____
(Note: the diagram is not necessarily to scale.)



- A) 7.5 B) 9.6 C) 8.0 D) 8.7

30) For a normal distribution with a mean of 7 and a standard deviation of 6, the value 10 has a z value of 30) _____

- A) 2.5 B) 1.5 C) 0.5 D) -0.5

Answer Key

Testname: HW5

- 1) A
- 2) A
- 3) B
- 4) B
- 5) C
- 6) D
- 7) A
- 8) A
- 9) A
- 10) B
- 11) D
- 12) A
- 13) D
- 14) C
- 15) A
- 16) B
- 17) B
- 18) D
- 19) A
- 20) C
- 21) C
- 22) D
- 23) B
- 24) D
- 25) D
- 26) D
- 27) D
- 28) B
- 29) C
- 30) C