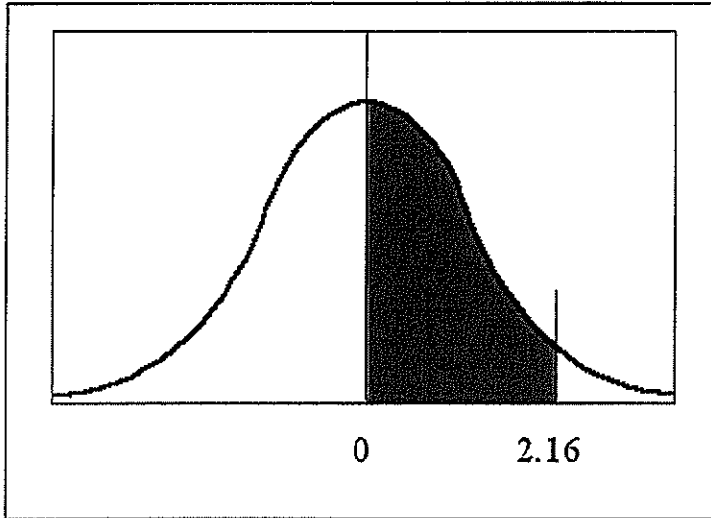


8) Find the area under the standard normal distribution curve between $z = 0$ and $z = 2.16$.

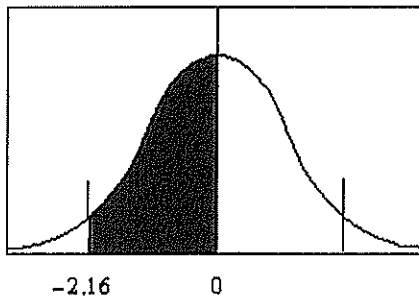
8) A



- 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



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

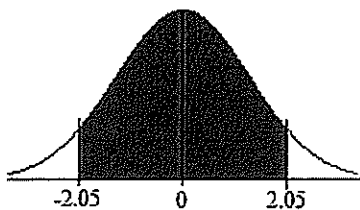
10) The area under the standard normal distribution curve to the right of $z = 1.83$ is 0.4664.

10) B

- A) True B) False

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

11) D



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

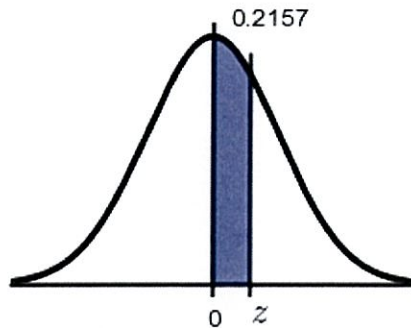
12) The probability $P(0 < z < 0.97)$ is 0.3340.

A) True

B) False

12) A

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



A) 0.27

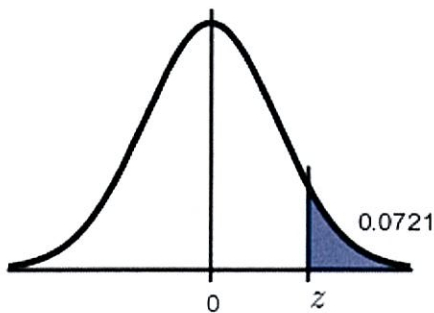
B) -0.79

C) 0.44

D) 0.57

13) 0

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

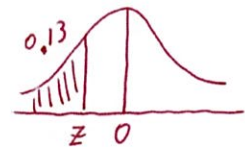


A) -1.46

B) 0.07

C) 1.46

D) 1.23



14) C

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) A

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) B

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

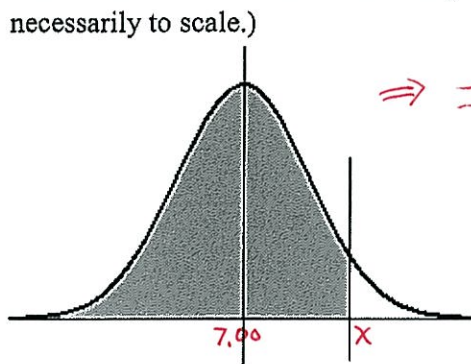
A) False

B) True

17) B

- 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) 0



From Z-table.

$$z_1 = 1.08 = \frac{x - \mu}{\sigma}$$

$$\Rightarrow 1.08 = \frac{x - 7}{3}$$

$$\Rightarrow 3 \times 1.08 = x - 7$$

$$\Rightarrow 10.24 = x$$

A) 8.14

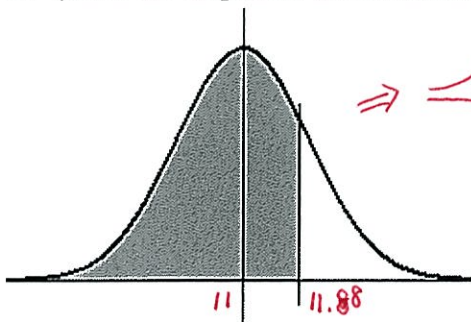
B) 7.00

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) 0



From Z-table.

$$z_1 = 0.44 = \frac{x - \mu}{\sigma}$$

$$0.44 = \frac{11.88 - 11}{\sigma}$$

$$\sigma = \frac{11.88 - 11}{0.44} = 2$$

A) 1.00

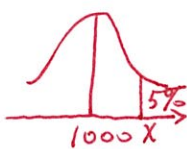
B) 4.00

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) B



From Z-table

$$z = 1.645 = \frac{x - \mu}{\sigma}$$

$$1.645 = \frac{x - 1000}{200}$$

$$x = 1329 \rightarrow 1330 \text{ close}$$

A) 1100

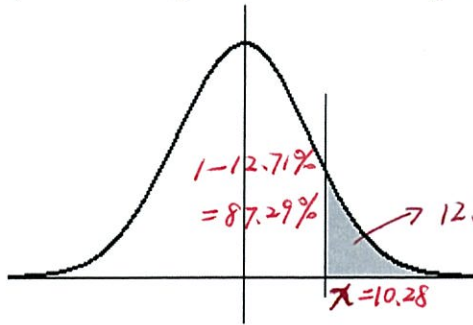
B) 1330

C) 1250

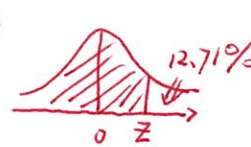
D) 1400

- 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.
 (Note: the diagram is not necessarily to scale.)

29) C



$$Z = \frac{X - \mu}{\sigma}$$



From z-table

$$Z = 1.14 = \frac{X - \mu}{\sigma}$$

$$\Rightarrow 1.14 = \frac{10.28 - \mu}{2}$$

$$\Rightarrow \mu = 8$$

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) C

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