

## z-scores practice problems

1. The distribution of heights of college aged American women has a mean of 65.5 inches and standard deviation of 2.5 inches. Calculate the z-score for a woman six feet tall (72 inches).

- a. 2.60
- b. 4.11
- c. 1.04
- d. 1.33

2. Scores from the UCLA Loneliness Scale are normally distributed with  $\mu = 40$  and  $\sigma = 10$ . What is the z-score for a loneliness score of 55?

3. What is the loneliness score that corresponds to a z-score of -0.5?

4. The z distribution has a mean equal to \_\_\_\_ and a standard deviation equal to \_\_\_\_.

- a. 50; 10
- b. 100; 15
- c. 0; 1
- d. 1; 0

5. A z-score may be converted to a raw score by:

- a.  $z = \frac{X - \sigma}{\mu}$
- b.  $z = (\mu - \sigma)X$
- c.  $z = \frac{X - \mu}{\sigma}$
- d.  $z = (X - \mu)\sigma$

6. Which of the following standard scores reflects the best relative performance on a test?

- a.  $z = 0.00$
- b.  $z = -.60$
- c.  $z = -1.44$
- d.  $z = -2.33$

7. A z-score tells you

- A. how far above or below the mean a score lies.
- B. the original raw score on which it is based.
- C. if the distribution it comes from is normal.
- D. how far above or below the mean a score lies in standard deviation units.

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8. A raw score is any score
- A. that comes from a distribution.
  - B. that has not been analyzed or transformed.
  - C. that has been analyzed or transformed.
  - D. that has been turned into a z-score.
9. Which of the following is not true about the z-score distribution?
- A. The mean of the z-distribution is 0.
  - B. The standard deviation of the z-distribution is 1.
  - C. The z-distribution looks skewed.
  - D. The z-distribution always keeps the raw score distribution's shape.
10. Z score is a type of \_\_\_\_\_ score.
- a. outlier
  - b. standard
  - c. normalized
  - d. T

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### SOLUTIONS

1. The distribution of heights of college aged American women has a mean of 65.5 inches and standard deviation of 2.5 inches. Calculate the z-score for a woman six feet tall (72 inches).

- a. **2.60**
- b. 4.11
- c. 1.04
- d. 1.33

2. Scores from the UCLA Loneliness Scale are normally distributed with  $\mu = 40$  and  $\sigma = 10$ . What is the z-score for a loneliness score of 55?

**1.50**

3. What is the loneliness score that corresponds to a z-score of -0.5?

**35**

4. The z distribution has a mean equal to \_\_\_\_ and a standard deviation equal to \_\_\_\_.

- a. 50; 10
- b. 100; 15
- c. **0; 1**
- d. 1; 0

5. A raw score may be converted to a z-score by: **C**

a.  $z = \frac{X - \sigma}{\mu}$

b.  $z = (\mu - \sigma)X$

c.  $z = \frac{X - \mu}{\sigma}$

d.  $z = (X - \mu)\sigma$

6. Which of the following standard scores reflects the best relative performance on a test?

- a.  **$z = 0.00$**
- b.  $z = -.60$
- c.  $z = -1.44$
- d.  $z = -2.33$

7. A z-score tells you

- A. whether an individual passed a test or not
- B. the most typical score of a distribution
- C. if the distribution it comes from is normal.
- D. how far above or below the mean a score lies in standard deviation units.**

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