

Algebra II Z - Scores

Name _____

Hour _____

- Men have heights with a mean of 176 cm and a standard deviation of 7 cm. Charles Darwin had a height of 182 cm.
 - What is the difference between Darwin's height and the mean?
 - How many standard deviations is the difference found in part (a)?
 - Convert Darwin's height to a z-score
 - If we consider "usual" heights to be those that convert to z-scores between -2 and 2, is Darwin's height usual or unusual?
- Stanford Binet IQ scores have a mean of 100 and a standard deviation of 16. Albert Einstein reportedly had an IQ of 160.
 - What is the difference between Einstein's IQ and the mean?
 - How many standard deviations is the difference found in part (a)?
 - Convert Einstein's IQ score to a z-score.
 - If we consider "usual" IQ scores to be those that convert to z-scores between -2 and 2, is Einstein's IQ usual or unusual?

- The beanstalk Club is limited to women and men who are very tall. The minimum height requirement for women is 70 in. Women's heights have a mean of 63.6 in. and a standard deviation of 2.5 in. Find the z-score corresponding to a woman with a height of 70 in. and determine whether that height is unusual.

- With a height of 75 in., Lyndon Johnson was the tallest president of the past century. With a height of 85 in., Shaquille O'Neal is the tallest player on the Miami Heat basketball team. Who is relatively taller: Lyndon Johnson among the presidents of the past century, or Shaquille O'Neal among the players on his Miami Heat team? Presidents of the past century have heights with a mean of 71.5 in. and a standard deviation of 2.1 in. Basketball players for the Miami Heat have heights with a mean of 80.0 in. and a standard deviation of 3.3 in.
- Three students take equivalent stress tests. Which is the highest relative score?
 - A score of 144 on a stress test with a mean of 128 and a standard deviation of 34
 - A score of 90 on a stress test with a mean of 86 and a standard deviation of 18.
 - A score of 18 on a stress test with a mean of 15 and a standard deviation of 5.

6. The college Physical Education Department offered an Advanced First Aid course last semester. The scores on the comprehensive final exam were normally distributed, and the z-scores for some of the students are shown below:

Robert	1.10	Jan	1.70	Susan	-2.00
Joel	0.00	John	-0.80	Linda	1.60

a) Which of these students scored above the mean?

b) Which of these students scored on the mean?

c) If the mean score was $\mu = \bar{x} = 150$ with standard deviation $\sigma = 20$, what was the final exam score for each student?

Robert _____

Jan _____

Susan _____

Joel _____

John _____

Linda _____