

Daily Agenda

Learning Targets:
I can apply the Empirical Rule to a normal set of data.
I can compute z scores and compare sets of data.

Homework

10.7 Day 1 Worksheet

Assessments

10.5 to 10.6 Quiz - 5/16
Unit 10 B Test - 5/23

Discipline yourself and others won't need to.
-John Wooden

Nov 15-8:24 PM

10.7 Properties of Normal Distributions

Normal Distribution

A symmetric distribution with a single peak at the center; referred to as **bell-shaped**.

z-Score

Measurement for data that is normally distributed. Indicates the number of standard deviations a value lies above or below the mean. Standardizes values to compare different sets of data on a common scale. Positive score is above mean; negative score is below mean.

Apr 15-8:56 PM

z-Score Formula

$$z = \frac{\text{value} - \text{mean}}{\text{standard deviation}}$$

How does standardizing affect distribution?

Does not change the **shape** of the distribution.

Changes the center by making the **mean** 0.

Changes the spread by making the **standard deviation** 1.

Apr 18-10:32 PM

Example: On the last test, the class average was an 80 with a standard deviation of 8 points.

If your score was a 96, what was your z-score?

$$z = \frac{96 - 80}{8} = 2$$

Your friend's score was a 76. What was his z-score?

$$z = \frac{76 - 80}{8} = -.5$$

What test score had a z-score of +1.5?

$$1.5 = \frac{x - 80}{8}$$

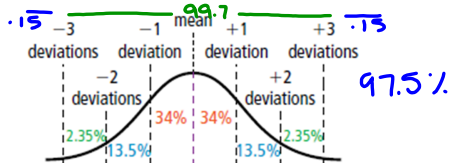
$$12 = x - 80$$

$$x = 92$$

May 14-2:40 PM

Empirical Rule

- 68% of values are within 1 standard deviation
- 95% of values are within 2 standard deviations
- 99.7% of values are within 3 standard deviations



May 14-2:41 PM

400m Running 1600m

Z-score = -1 better

Z-score = +1.5

Math Test

Z-score = -1

Z-score = +1 better

May 15-11:26 AM

Example: On the Reading/Writing and Math parts of the SAT, the mean is 500 and the standard deviation is 100.

If your score on one part was a 600, where do you stand among all the students that took the test?

May 14-2:40 PM