February 11, 2020

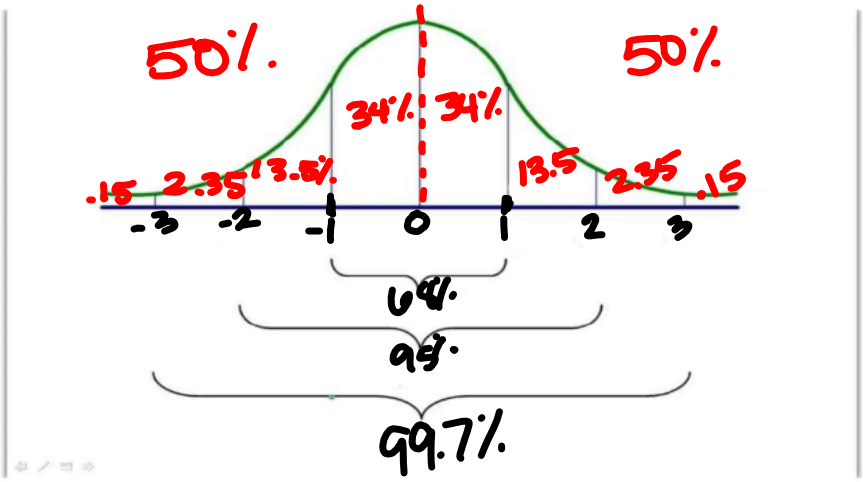
1) Notes

2) CALC

3) Turn in Falcons WS

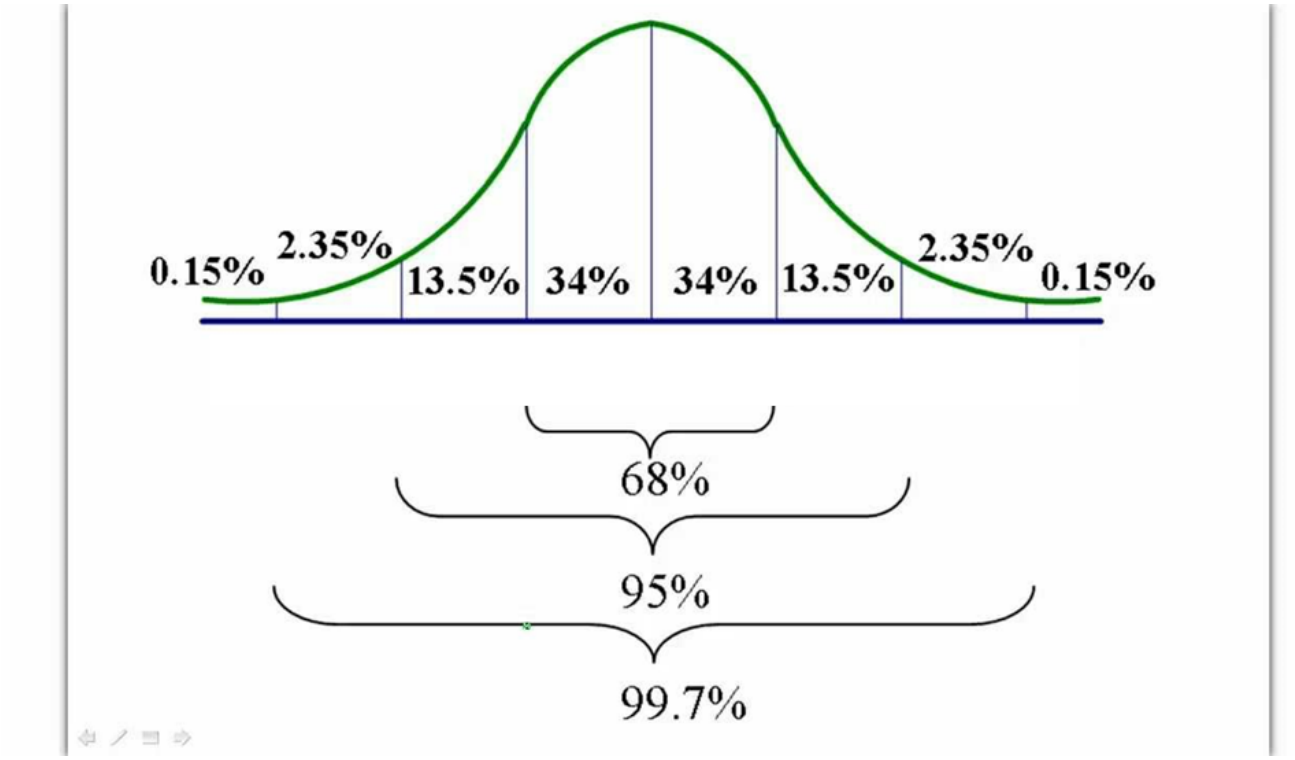
Topic: Empirical Rule **Date:** _____

What am I learning today?

Main Ideas/ Questions	**Notes**
Introduction to the Normal Curve	**Normal Distribution** – a type of distribution that is Symmetric with the majority of the data being close to the mean and very few data values are at the extremes. Examples: Height, IQ scores, Test scores **Standard Normal Distribution** – has a mean equal to 0 and a standard deviation of 1. 
Empirical Rule	**Empirical Rule** – Also known has the 68-95-99.7 rule. This rule states how much data will fall between 1, 2, and 3 standard deviations from the mean. *** There should be 68 % of the data between ±1 standard deviations *** There should be _____ % of the data between ±2 standard deviations *** There should be _____ % of the data between ±3 standard deviations 

Empirical Rule

https://www.learner.org/courses/againstallodds/unitpages/unit08.html



Topic: Empirical Rule **Date**: _____

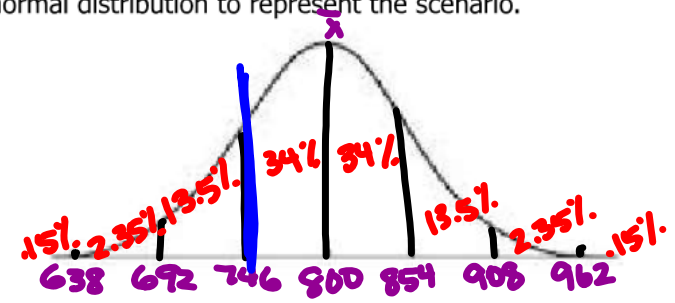
Main Ideas/ Questions

Examples

Notes

Example 1: Using the empirical rule, the weights of a fully-grown male horses follow a normally distribution with a mean of 800 kg and a standard deviation of 54 kg.

a. Draw a normal distribution to represent the scenario.



b. What percentage of horses weigh less than 692 kg in? 2.5%

c. What is the weight range for the middle 95% of horses? between 692 & 908

d. What weight separates the heaviest 2.5% of horses? 908 kg

e. What percentage of horses weigh more than 746 kg? 84%

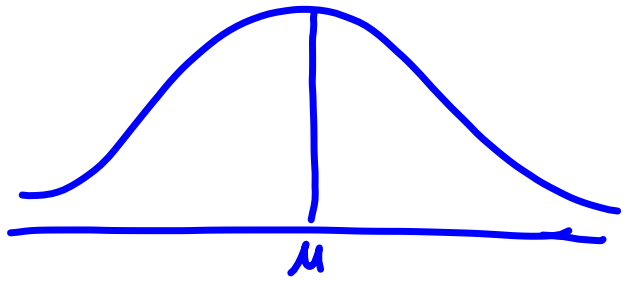
Example 2: Using the empirical rule, scores on the 2016 Critical Reading part of the SAT were roughly normal with a mean of 501 and a standard deviation of 112.

a. Draw a normal distribution to represent the scenario.

b. What is the score range for the middle 68% of students? Between 389 & 613

c. What percentage of students scored less than a 837? 99.85%

d. What score separates the lowest 16%? 389



μ
$\mu \pm \sigma$
$\mu \pm 2\sigma$
$\mu \pm 3\sigma$