



M5-04: Central Limit Theorem Examples

Part of the "Polling, Confidence Intervals, and the Normal Distribution" Learning Badge

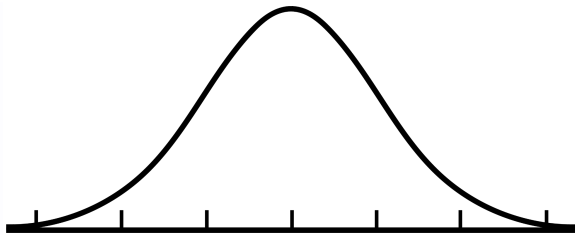
Video Walkthrough: <https://discovery.cs.illinois.edu/m5-04/>

The Central Limit Theorem Examples

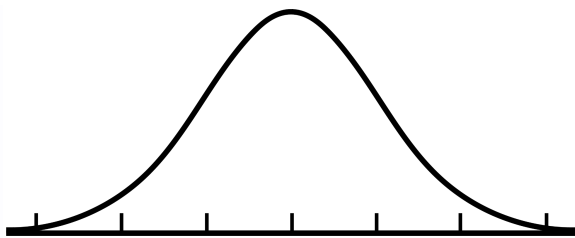
Look at the following situations below: which do you think is more probable?

Your Guess Here: _____

Situation #1: You play roulette 100 times, betting \$1 on red each time. What is the chance you win more than \$1? Remember there are 18 red, 18 black, and 2 green spots on a roulette wheel.



Situation #2: You play roulette 900 times, betting \$1 on red each time. What is the chance you win more than \$1? Remember there are 18 red, 18 black, and 2 green spots on a roulette wheel.



Technical Point: The Continuity Correction

In some cases, it's necessary to make the normal approximation more exact by moving the endpoints of an interval to the nearest half-integer. This is called making a *continuity correction*.

Puzzle: In 100 coin tosses, what's the chance of getting exactly 50 heads?