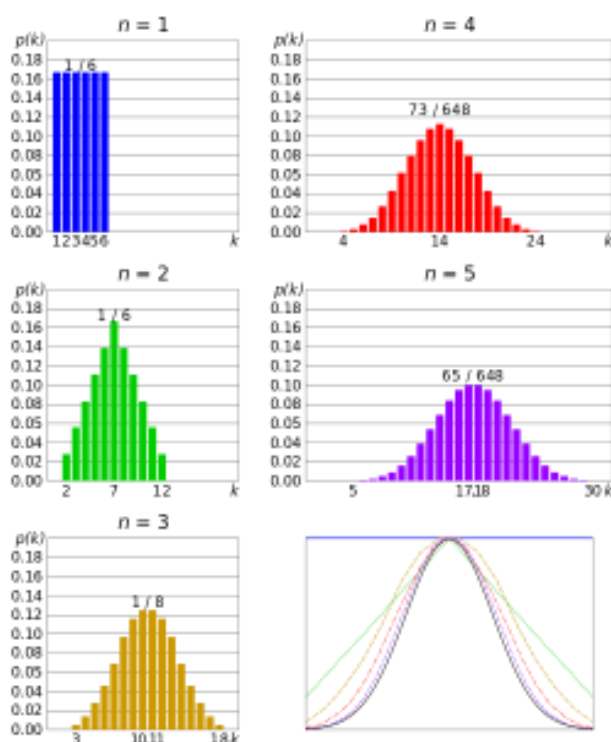


Central Limit Theorem

The Central Limit Theorem states that the sampling distribution of the sample means approaches a normal distribution as the sample size gets larger — no matter what the shape of the population distribution. This fact holds especially true for sample sizes over 30. All this is saying is that as you take more samples, especially large ones, your graph of the sample means will look more like a normal distribution.

Here's what the Central Limit Theorem is saying, graphically. The picture below shows one of the simplest types of test: rolling a fair die. The more times you roll the die, the more likely the shape of the distribution of the means tends to look like a normal distribution graph.



An essential component of the Central Limit Theorem is that the average of your sample means will be the population mean. In other words, add up the means from all of your samples, find the average and that average will be your actual population mean. Similarly, if you find the average of all of the standard deviations in your sample, you'll find the actual standard deviation for your population. It's a pretty useful phenomenon that can help accurately predict characteristics of a population. Watch a video explaining this phenomenon, or read more about it here: [The Mean of the Sampling Distribution of the Mean](#).