

Simulated Coins



You're about to investigate the sampling distribution and model for the proportion of heads that may show up when a coin is tossed repeatedly. Toss the coins if you want, but it's much easier (and faster) to do a simulation!

- Set up your calculator to simulate tossing a coin 25 times. The easiest way to do this is to generate 0s and 1s with equal probability, with 1 representing heads. By adding up all the 1s, you can effectively count the number of heads. By dividing that count by the number of tosses, you will get \hat{p} , the sample proportion of heads. The complete calculator command would be: `sum(randInt(0,1,25))/25`
- Run 20 trials, recording all the sample proportions.
- On graph paper...
make a histogram of the results on graph paper.
- Repeat your simulation, this time tossing the coin 100 times. Again run 20 trials.
- On graph paper...
make a histogram of these new 20 sample proportions.
- Typed, double-spaced...
Compare your two distributions of the proportions of heads observed in your simulations.

What should have happened?

Describe the "Normalness" of the histogram for the 100 tosses.

Describe how your results might differ if you had run 1000 trials of the simulation instead of only 20.