

Post 1

- What is the difference between theoretical and empirical probability? What is the theoretical probability of flipping a coin and getting a tail? Do you expect the empirical probability to be the same as the theoretical probability? Why or why not?
- Name your favorite musician, actor, author or artist and do a Google search to find his or her age. Flip a coin one time for each year the person is old. If he or she is 34, flip the coin 34 times. Record the number of tails you obtain.
- Use the data to determine the empirical probability that the coin will land on tails. Express the probability as a fraction, a decimal, and a percentage. Round your answers to two decimal places, if necessary.

Post 1 Example

NOTE: Not all parts of the Discussion are included in this Example. Read the Discussion Question thoroughly and respond to all parts of the Question.

My favorite singer is Barry Manilow and he is 72 years old according to Google at <https://goo.gl/YfMRPp>. I flipped a coin 72 times and got 37 tails.

$$\begin{aligned} P(\text{tails}) &= \frac{\# \text{ tails}}{\# \text{ times coin flipped}} \\ &= \frac{37}{72} \end{aligned}$$

The empirical probability of getting tails can be written as follows:

Fraction: $\frac{37}{72}$

Decimal: $\frac{37}{72} = 0.513888\dots \approx 0.51$

Percent: $\frac{37}{72} = 0.513888\dots = 51.3888\% \approx 51.39\%$