

Lesson Summary

- Observing the long-run relative frequency of an event from a chance experiment (or the proportion of an event derived from a long sequence of observations) approximates the theoretical probability of the event.
- After a long sequence of observations, the observed relative frequencies get close to the probability of the event occurring.
- When it is not possible to compute the theoretical probabilities of chance experiments, then the long-run relative frequencies (or the proportion of events derived from a long sequence of observations) can be used as estimated probabilities of events.

Problem Set

1. If you created a stack of 15 pennies taped together, do you think the probability of getting a heads on a toss of the stack would be different than for a stack of 10 pennies? Explain your answer.
2. If you created a stack of 20 pennies taped together, what do you think the probability of getting a heads on a toss of the stack would be? Explain your answer.
3. Based on your work in this lesson, complete the following table of the relative frequencies of heads for the stack you created:

Number of Tosses	Total Number of Heads So Far	Relative Frequency of Heads So Far (to the nearest hundredth)
1		
5		
10		
15		
20		
25		
30		

4. What is your estimate of the probability that your stack of pennies will land heads up when tossed? Explain your answer.
5. Is there a theoretical probability you could use to compare to the estimated probability? Explain your answer.