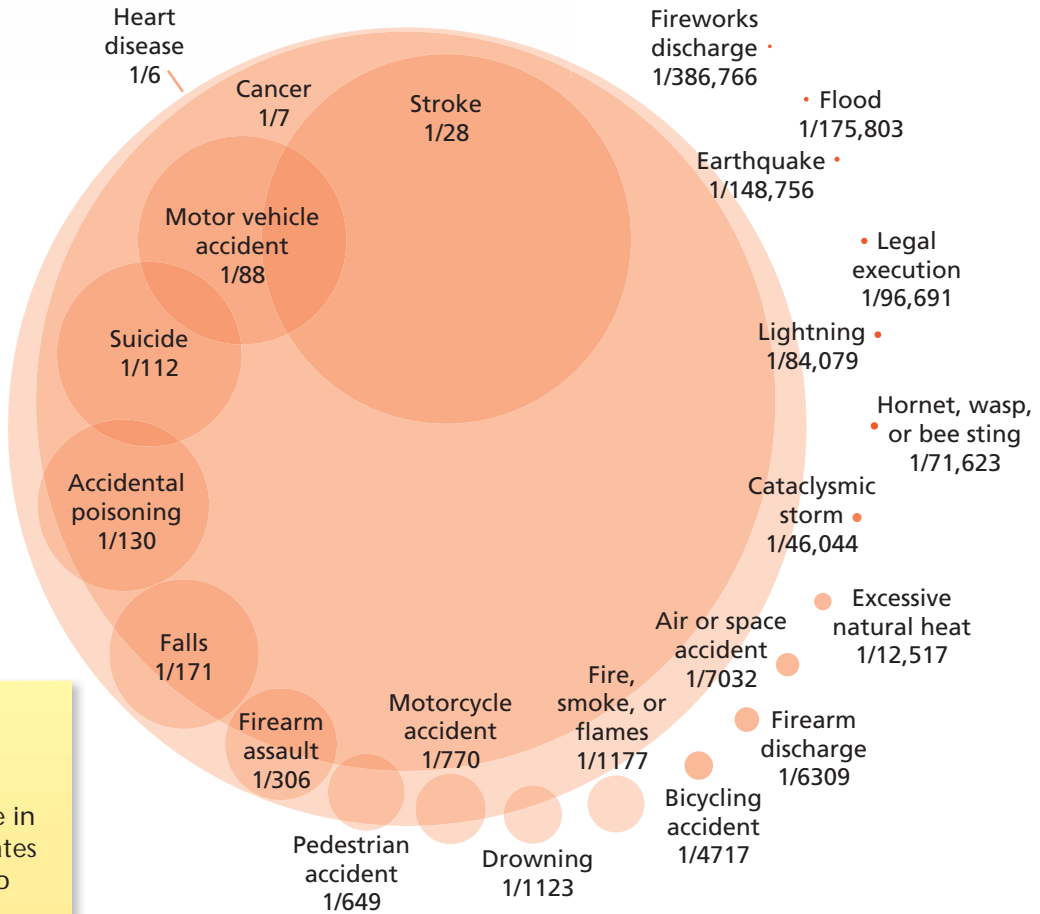


Estimating a Probability Using Historical Results

One of the most common ways to estimate the probability of an event is to look at how often it occurred in the past.

EXAMPLE 5 Interpreting a Historical Probability

Apiphobia is a fear of bees. Cyclophobia is a fear of bicycles. According to the bubble graph, how many times more likely is it for a person to die in a bicycling accident than by a bee sting?



Study Tip
 The area of each bubble in the bubble graph indicates its probability relative to the value of the other probabilities.
 Note that the bubble graph is not comprehensive. There are many other causes of death, such as pneumonia and diabetes.

SOLUTION



$$P = \frac{1}{4717} \approx 0.0002$$



$$P = \frac{1}{71,623} \approx 0.00001$$

A fatal bicycle accident is about 20 times more likely than a fatal bee sting.

✓ Checkpoint

Help at Math.andYOU.com

What is the probability that a person dies from heart disease, cancer, or a stroke? Explain your reasoning.