

Activity 7 Assessment

Comparing Theoretical and Experimental Probabilities of Two Independent Events

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Determines the theoretical probability of two independent events



The theoretical probability of rolling 5 is $\frac{1}{6}$.

The theoretical probability of tossing heads is $\frac{1}{2}$.

So, the theoretical probability of rolling 5 and tossing heads is:

$$\frac{1}{6} \times \frac{1}{2} = \frac{1}{12}, \text{ or } 0.08\bar{3}, \text{ or } 8.\bar{3}\%$$

Explains how to determine the experimental probability of two independent events

I would conduct the experiment many times, then divide the number of favourable outcomes by the number of times I conducted the experiment.

Uses theoretical probabilities to predict the outcomes of an experiment

The theoretical probability of rolling 5 on a number cube and getting a head on a coin toss is $\frac{1}{12}$.

In an experiment of 100 trials, I would expect this outcome to occur $\frac{1}{12} \times 100 = 8.333\dots$ times, or about 8 times.

Explains how fairness in an experiment or game affects the probabilities

An unfair coin or number cube affects the experimental probability, but not the theoretical probability. A set of outcomes where some are more likely than others affects the fairness of a game.

Observations/Documentation