

It is important to note that for a large number of trials in an experiment, the experimental probability begins to approach the theoretical probability.

Example 6

Bindi tosses a coin 10 times. She records her findings: 9 Heads and 1 Tail.

- a) State the experimental probability of tossing the coin and it landing "heads".

$$E.P. = \frac{\text{Heads}}{\text{total tosses}} \Rightarrow \frac{9}{10}$$

- b) State the theoretical probability of tossing the coin and landing "heads".

$$P(H) = \frac{1}{2}$$

- c) What would happen if Bindi tossed the coin 20 times? 100 times? 1 000 000 times?

The probability of tossing a head is closer to the theoretical probability (50% or $\frac{1}{2}$) the more Bindi tosses the coin 1,000,000 times.

On-line Activity:

You can test this theory by heading to the 'virtual coin flip' page at:

<http://www.btwaters.com/probab/flip/coinmainD.html>

Choose 'Session' for the option, pick the number of flips, and let 'er rip!



NOTE: the more trials done:-

the experimental probability gets closer to the theoretical probability.