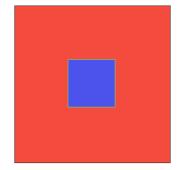# Vocabulary: Geometric Probability

Vocabulary

- Experimental probability – an estimate of the likelihood of an event, based on the outcome of an experiment.

  - If an event occurs x times in y trials, its experimental probability is $\frac{x}{y}$.

    - For example, if a coin is flipped 50 times and lands on heads 23 times, the experimental probability of heads is $\frac{23}{50}$.

- Geometric probability – probability that depends on geometric properties such as length and area.

  - For example, if darts are thrown at random at the squares shown to the right, the probability of a dart hitting the blue square depends on the areas of the two squares.

- Probability – the likelihood of an event, expressed as a number between 0 and 1.

  - A probability of 0 (or 0%) means that the event is impossible.

  - A probability of 1 (or 100%) means that the event is certain.

  - A probability of $\frac{2}{5}$ (or 0.40, or 40%) means that an event will occur about 2 times out of every 5 trials, or 40% of the time.

- Theoretical probability – probability that is derived from logic and calculation.

  - If all outcomes are equally likely, the theoretical probability of an outcome is equal to 1 divided by the number of possible outcomes.

    - For example, the theoretical probability of rolling a "4" on a 6-sided number cube is $\frac{1}{6}$, or about 0.167 (16.7%).