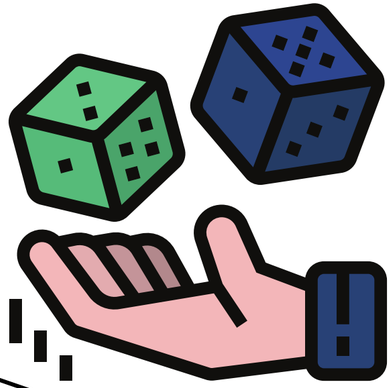
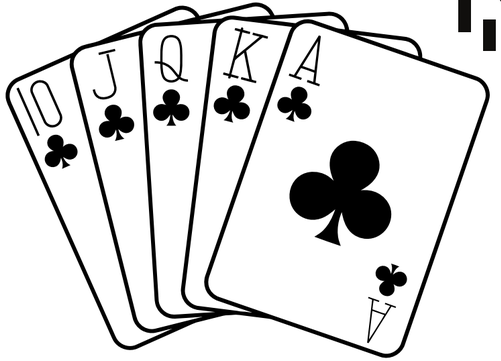
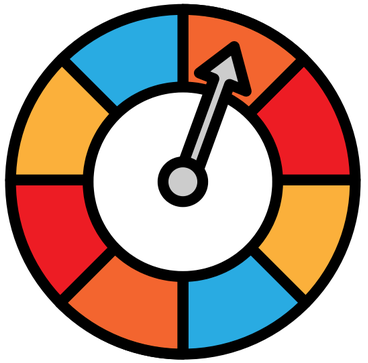
REVIEW

Probability

EMF7B and EMF7C



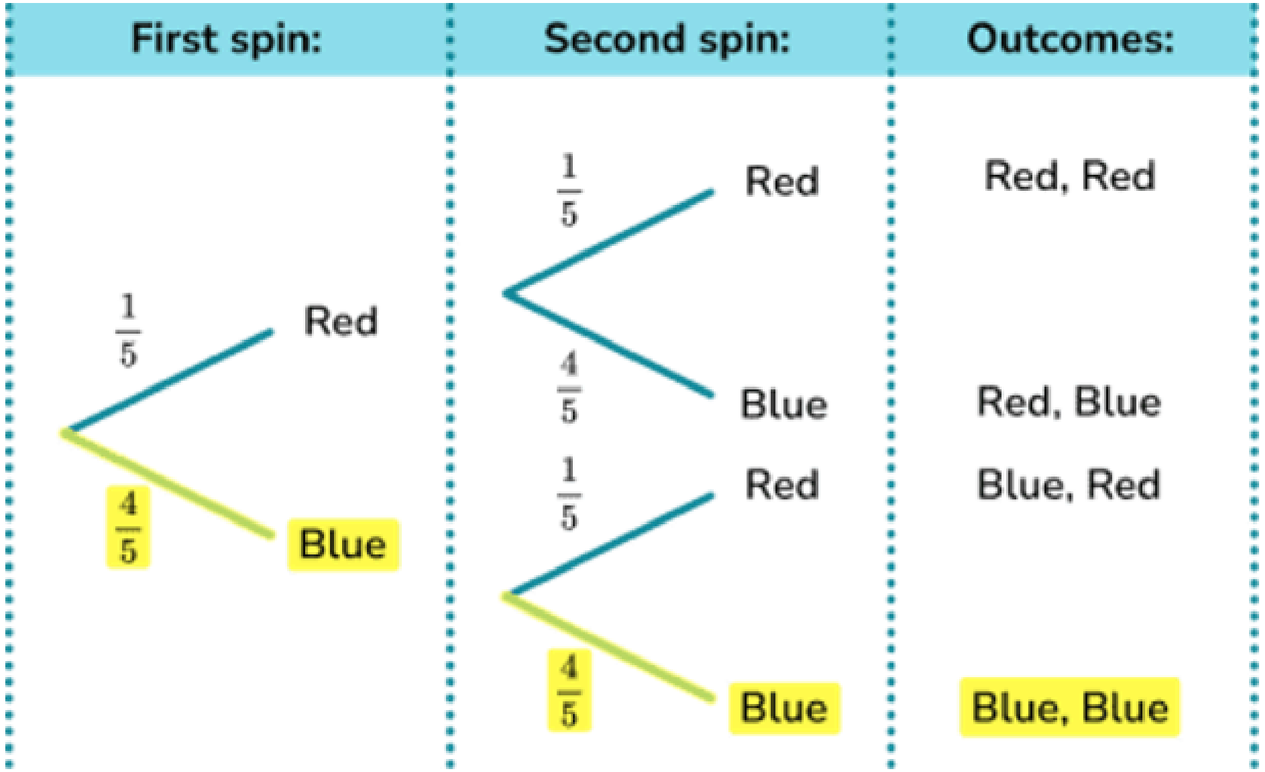




QUESTION OF THE DAY

Based on this diagram, what is the probability of spinning 2 blues?

a. 1/25
b. 16/25
c. 2/25
d. 2/5



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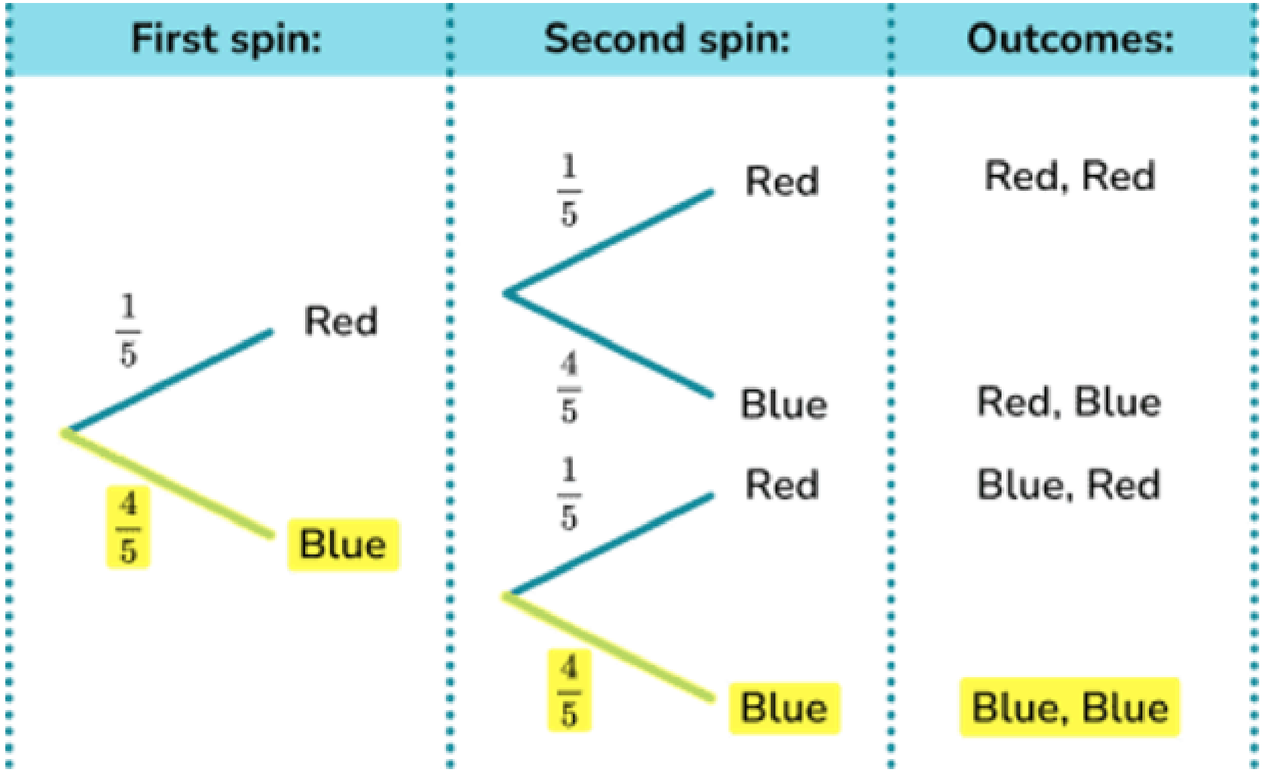


QUESTION OF THE DAY

Based on this diagram, what is the probability of spinning 2 blues?

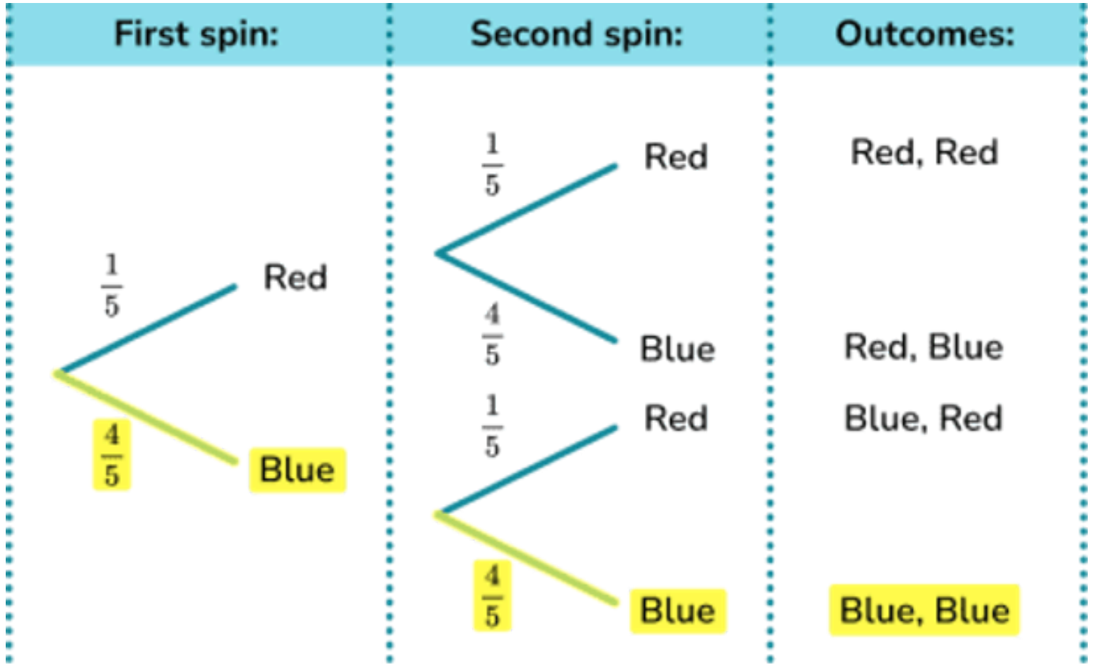
These are independent events!

P(A and B) = P(A) x P(B)

= P(blue 1) x P(blue 2)

= 4 / 5 x 4 / 5

= 16 / 25



HOW IS PROBABILITY REPRESENTED?

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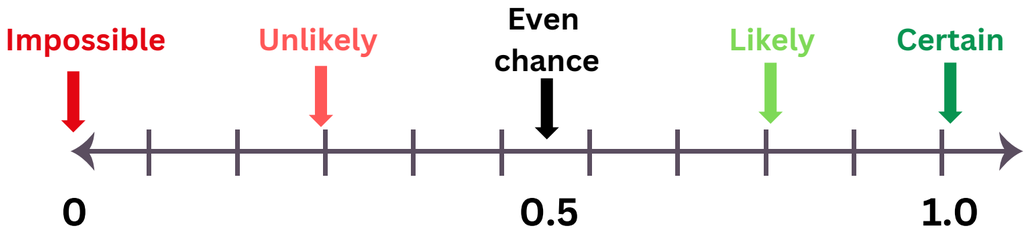
Probability is often expressed as....

- a proper fraction

- a decimal between 0 and 1



- a percent.

50% 20% 15%

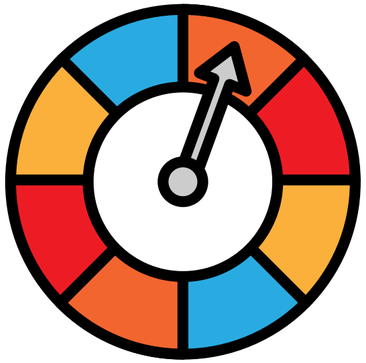
WHAT ARE SIMULATIONS? EXAMPLES?

WHAT ARE SIMULATIONS?

A probability experiment used to model a real situation

Examples:

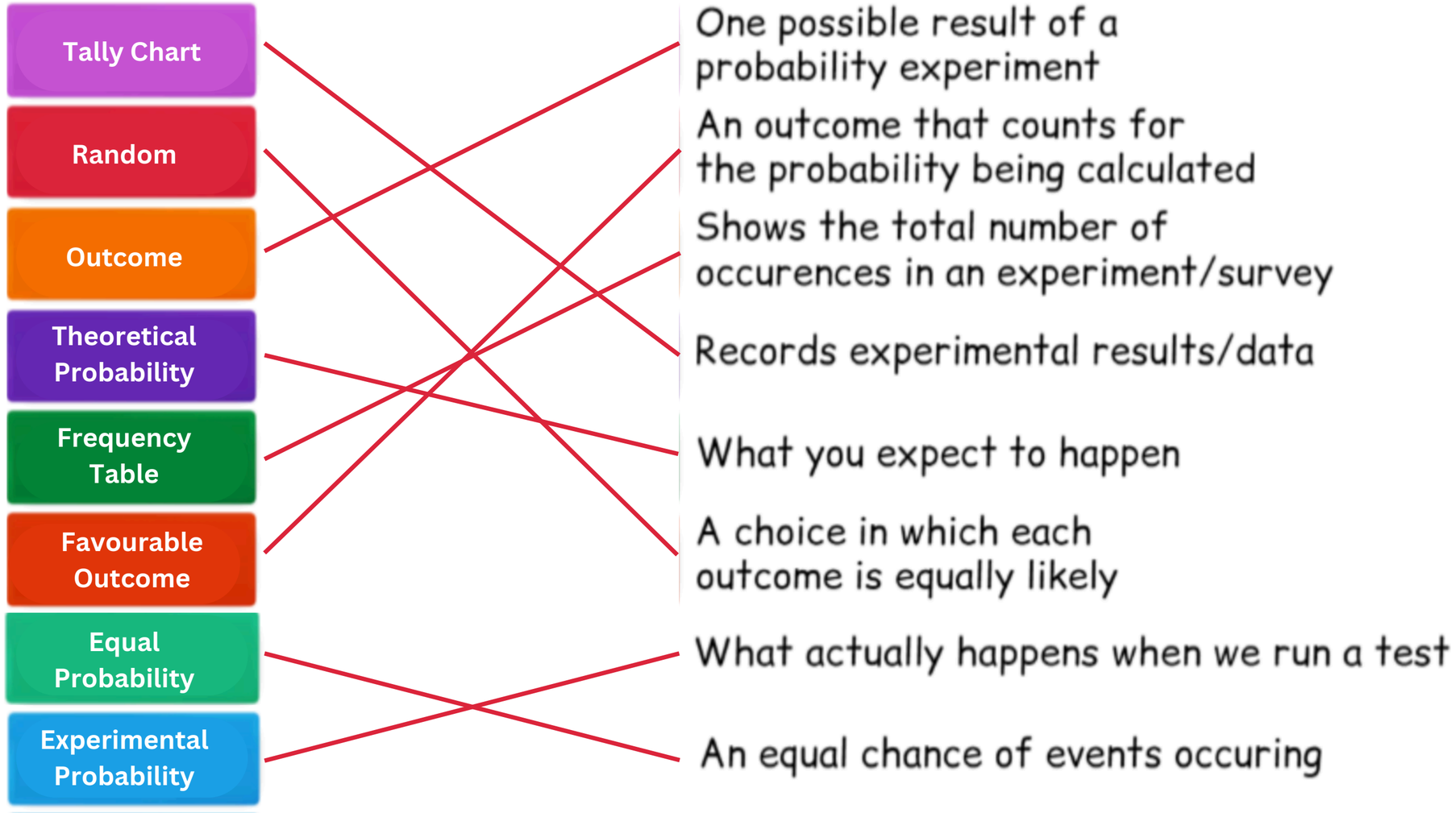
- marbles
- cards
- dice
- coins
- spinners
- .....and many more



MATCHING ACTIVITY

Tally Chart	One possible result of a probability experiment
Random	An outcome that counts for the probability being calculated
Outcome	Shows the total number of occurences in an experiment/survey
Theoretical Probability	Records experimental results/data
Frequency Table	What you expect to happen
Favourable Outcome	A choice in which each outcome is equally likely
Equal Probability	What actually happens when we run a test
Experimental Probability	An equal chance of events occuring

MATCHING ACTIVITY



THEORETICAL VS EXPERIMENTAL

Theoretical

- The probability we expect based on the total number of possible outcomes and the number of outcomes leading to the event.

$$P = \frac{\text{number of outcomes in the event}}{\text{total number of possible outcomes}}$$

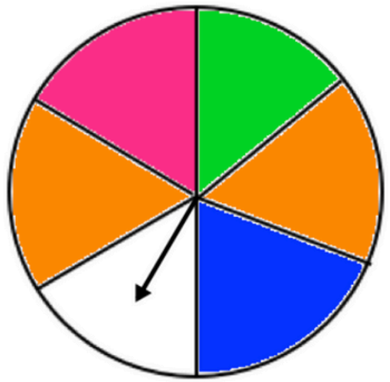
Experimental

- The probability calculated from the results of an experiment with repeated trials

$$P = \frac{\text{number of times the event occurs}}{\text{total number of trials}}$$

THEORETICAL VS EXPERIMENTAL

Kelly created a spinner, which is pictured below. What is the probability of the spinner landing on the orange section?



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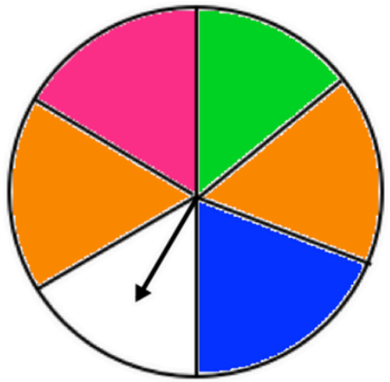
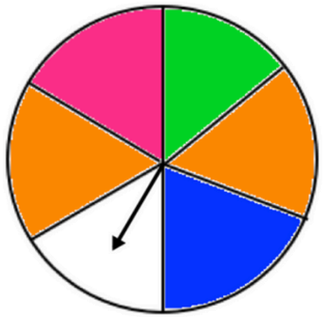


Theoretical

THEORETICAL VS EXPERIMENTAL

Kelly spun a spinner, which is pictured below, 35 times. She recorded her results in the table provided. What is the probability of the spinner landing on the orange section?



Color	Number of Spins
Green	4
Blue	7
White	3
Orange	13
Pink	8

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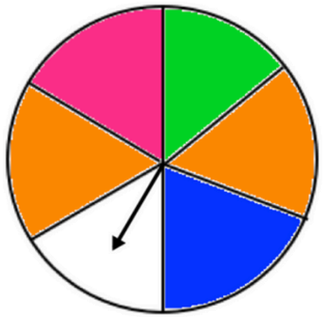

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Experimental

ANALYZING SPINNERS

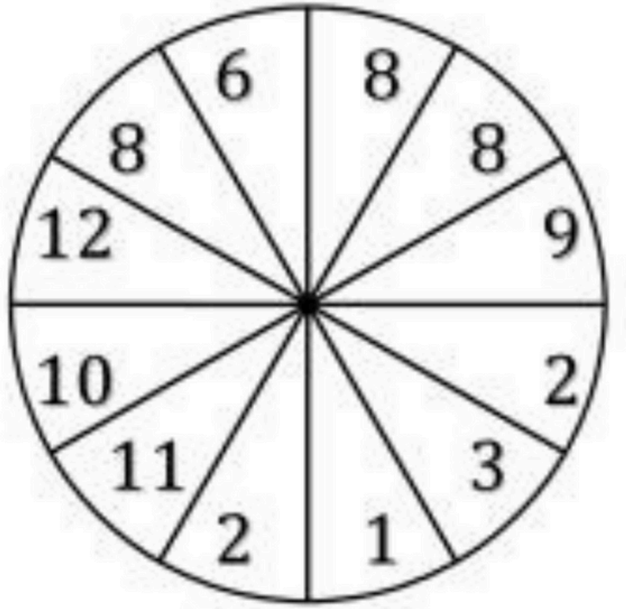
P(≤ 7) =

P(>4) =

P(≥ 10) =

P(10) =

P(< 1) =



ANALYZING SPINNERS

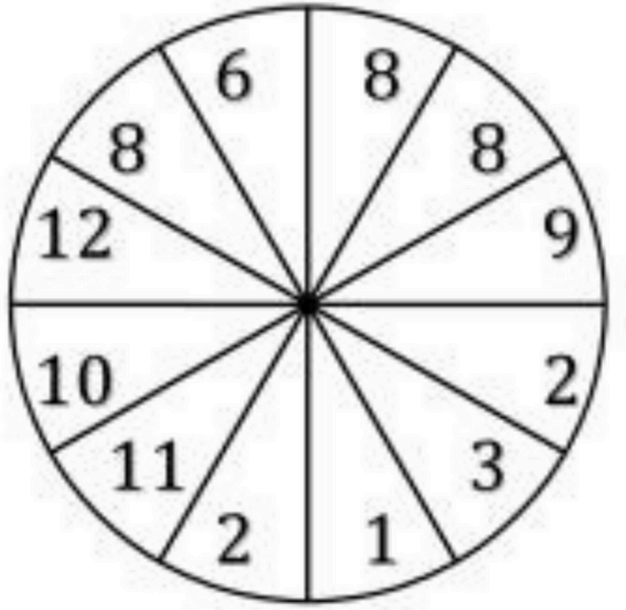
P(≤ 7) = 5 / 12

P(>4) = 8 / 12 --> 2 / 3

P(≥ 10) = 3 / 12 --> 1 / 4

P(10) = 1 / 12

P(< 1) = 0 / 12 --> 0



INDEPENDENT VS DEPENDENT

Independent

- These are events that do not affect each other. The outcome of one event has no impact on the outcome of another.

$$P(A \text{ and } B) = P(A) \times P(B)$$

Dependent

- The probability calculated from the results of an experiment with repeated trials

$$P(A \text{ and } B) = P(A) \times P(B \text{ after } A)$$

INDEPENDENT VS DEPENDENT

You flip a coin twice. What is the probability of the coin landing on heads and then landing on heads again?

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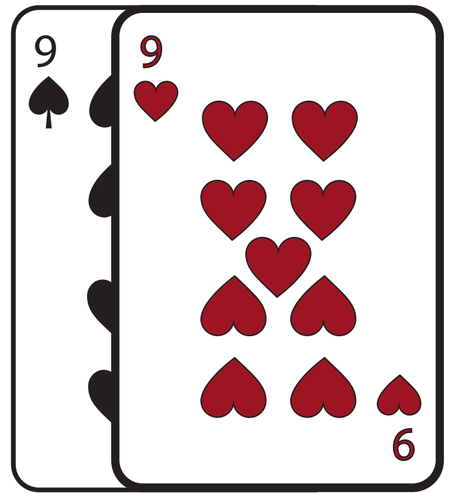
INDEPENDENT VS DEPENDENT

In a deck of cards, what is the probability of picking a 9, taking it out, then picking another 9?



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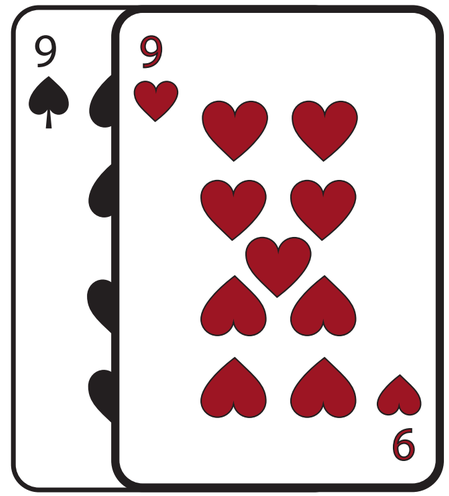

MUTUALLY EXCLUSIVE VS INCLUSIVE

Mutually Exclusive

- Two events are mutually exclusive if they cannot happen at the same time - if one event occurs, the other cannot

Therefore, you use this formula:

$$P(A \text{ or } B) = P(A) + P(B)$$

Look for the word **OR** and a scenario that **cannot** occur

Inclusive

- Events that can happen at the same time

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

Look for the word **OR** and a scenario that **can** occur at the **same time**

IN PAIRS...

Complete the following worksheet: