

**Determine whether events are independent****1**

Select what this probability formula calculates for independent events

$$P(A) \cdot P(B)$$

A (A) conditional on (B)

B (A) union (B)

C (A) intersect (B)

D Complement of (A)

2

This formula calculates the probability of what for independent events?

$$P(A) \cdot P(B)$$

A Both A and B happening

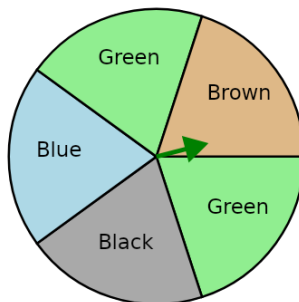
B Event A not happening

C Event A happening, given that B has happened

D Either A or B happening

3

Calculate the probability of spinning Brown twice in a row. Show as an equation



P(Brown twice)

A

$$\frac{1}{5} \cdot \frac{1}{5}$$

B

$$\frac{2}{25} \cdot \frac{2}{25}$$

C

$$\frac{3}{23} \cdot \frac{3}{23}$$

D

$$\frac{4}{25} \cdot \frac{4}{25}$$

4

Either A or B happening

A

$$\frac{P(A \cap B)}{P(B)}$$

B

$$P(A) \cdot P(B)$$

C

$$P(A) + P(B) - P(A \cap B)$$

5

Two fair six-sided dice are rolled. Event A: The second die shows a 4. Event B: The first die shows an even number.

A $P(A \cap B) = 0$

B Neither of these

C $P(A \cap B) = P(A) \times P(B)$ **6**

Event A and event B are independent of each other.

A $P(A \cap B) = 0$

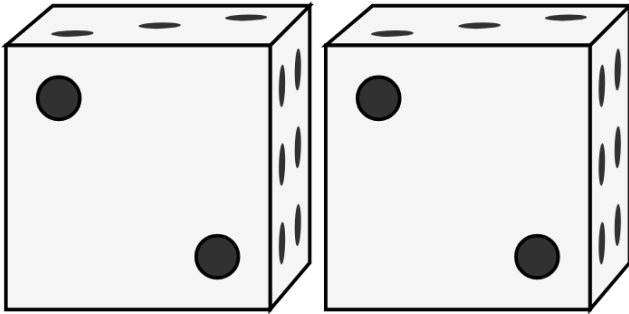
B Neither of these

C $P(A \cap B) = P(A) \times P(B)$



Determine whether events are independent

- 7** What formula would give you the chance of rolling a 2 twice in a row?

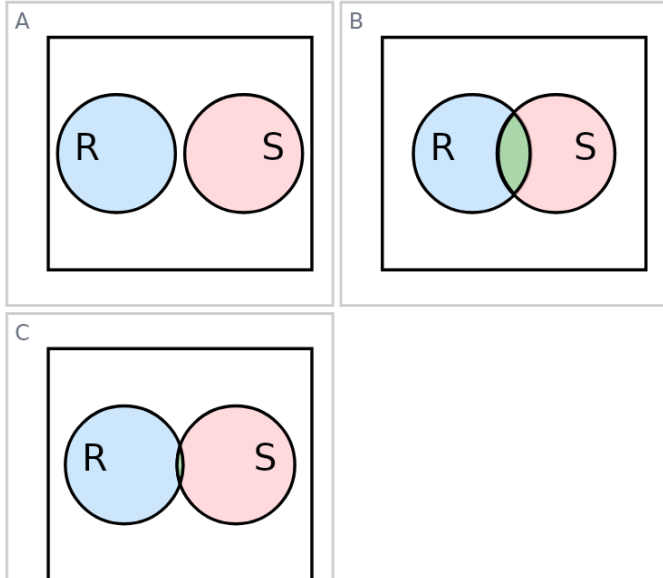


- A $\frac{P(2_1 \cap 2_2)}{P(2_2)}$
- B $1 - P(2_1)$
- C $P(2_1) \cdot P(2_2)$

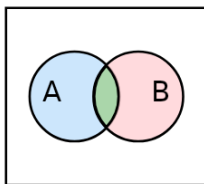
- 8** Two events, A and B, are neither independent nor mutually exclusive.

- A Neither of these
- B $P(A \cap B) = P(A) \times P(B)$
- C $P(A \cap B) = 0$

- 9** Events R and S are mutually exclusive and not independent.

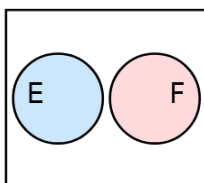


- 10** Based on this Venn diagram, are events A and B mutually exclusive?



- A No
- B Yes

- 11** Based on this Venn diagram, which statement best describes events E and F?



- A Independent, but not mutually exclusive
- B Both mutually exclusive and independent
- C Neither mutually exclusive nor independent
- D Mutually exclusive, but not independent

- 12** A fair six-sided die is rolled and a spinner with red, green, and blue sections is spun. Event A: The spinner lands on blue. Event B: The die shows a number greater than 4.

- A Yes, events A and B are independent.
- B No, events A and B are not independent.