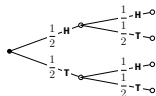


Start Tasks – Answers



1. Two fair coins tossed. Does the 1st affect the 2nd? Independent?



Solution

Yes – independent.

2. A card is drawn and NOT replaced. Is the 2nd draw independent of the 1st? Explain.

Solution

No – removing the card changes what is left, so the 2nd draw is affected.

3. What does “independent events” mean, in your own words?

Solution

One event happening does not change the probability of the other.

4. What does “conditional probability” mean, in your own words?

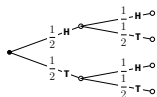
Solution

The probability of an event given that another event has already happened.

Start Tasks — Answers



5. For two fair coin tosses, find $P(\text{Heads then Heads})$.



Solution

$$P(H, H) = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

7. A die is rolled twice. Are the two rolls independent?

Solution

Yes – each roll starts fresh; the die has no memory.

6. A marble is drawn, then replaced, then a second is drawn. Are the draws independent? Why?

Solution

Yes – replacing the marble restores the original probabilities.

8. Why does “replacement” usually make two draws independent?

Solution

Replacement restores the original set, so the 2nd draw's chances are unchanged.