

# Independent Events

## Video 249 on Corbettmaths

Examples

Workout



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Question 1: A fair coin is flipped twice.

- (a) Find the probability that the coin lands on heads twice.
- (b) Find the probability that the coin lands on tails twice.
- (c) Find the probability that the coin lands on heads exactly once.



Question 2: Penelope is playing football.

When attempting to score a penalty, the probability she scores is  $\frac{2}{3}$

During the game, Penelope takes two penalties.  
Find the probability that Penelope scores both.

Question 3: Trevor is taking part in a quiz.

The probability that he answer a question correctly is  $\frac{3}{5}$

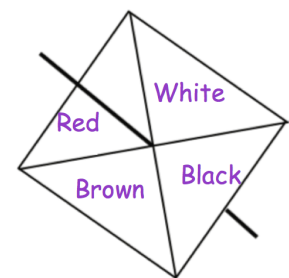
Trevor is asked two questions.

- (a) Calculate the probability that Trevor answers both questions correctly.
- (b) Calculate the probability that Trevor answers both questions incorrectly.

Question 4: Daisy has a biased spinner.

The probability of each colour is:

Colour	Red	White	Black	Brown
Probability	0.1	0.4	0.3	0.2



Daisy spins the spinner twice.

- (a) Find the probability of the spinner landing on white twice.
- (b) Find the probability of the spinner landing on black and then brown.
- (c) Find the probability of the spinner landing on the same colour in both spins.

Question 5: A fair six sided dice is rolled three times.

- (a) Find the probability of getting a two all three times.
- (b) Find the probability of getting no twos

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Question 6: Mark is playing darts.  
The probability he hits the bullseye is 0.4  
Mark throws two darts

- (a) Find the probability of Mark hitting the bullseye once.
- (b) Find the probability of Mark hitting the bullseye at least once.

Question 7: A bag contains five yellow sweets, three green sweets and one purple sweet.  
A sweet is taken out of the bag and replaced.  
Another sweet is taken out.

- (a) Find the probability that both sweets are yellow.
- (b) Find the probability of neither sweet is green.
- (c) Find the probability that the two sweets are different colours.

Question 8: The probability of a bus being on time is  $\frac{3}{4}$

Archie catches the bus to work three times each week.



- (a) Work out the probability that the bus is late every time.
- (b) Work out the probability that the bus is on time every time.
- (c) Work out the probability that the bus is late exactly once.

Question 9: Jackson, Frederick and Kelvin each sit a test.

The probability Jackson passes is  $\frac{9}{10}$

The probability Frederick passes is  $\frac{2}{3}$

The probability Kelvin passes is  $\frac{1}{2}$

- (a) Find the probability that Jackson and Kelvin pass, but Kelvin fails.
- (b) Find the probability that Frederick passes, but Jackson and Kelvin fail.
- (c) Find the probability that at least two boys pass.

Question 10: The probability that Dylan reads at night is  $\frac{4}{5}$

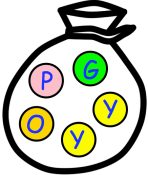
Calculate the probability that Dylan reads every night in one week.

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## Apply

Question 1: Amelia is organising a game for a charity fête.  
She has put 1 orange, 1 pink, 1 green and 2 yellow counters into a bag.



To play, each person will pay £1 and take out a counter at random.  
They will then replace the counter and then take a second counter at random.  
The person will win £2.50 if both counters are the same colour.

Amelia expects 200 people to play the game.

How much money would Amelia expect to raise for charity?

Question 2: There are 12 tiles in a bag, each with a letter written on it.

C O R B E T T M A T H S

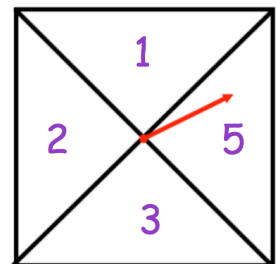
A tile is selected at random and then replaced.  
Another tile is then selected.

Find the probability that both tiles have different letters on them.

Question 3: A fair spinner has four sections.

The spinner is spun three times.  
The three numbers are added together to give a score.

- (a) Find the probability that the score is odd.  
(b) Find the probability that the score is greater than 3.



Question 4: Tom and Ben sit their driving test.  
The probability Tom passes is 0.4  
The probability that only one man passes is 0.56  
Find the probability they both fail.

## Answers



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