

Examples

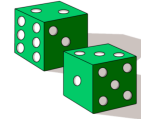


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Workout



Question 1: Two fair six sided dice are rolled.
The numbers on the two dice are **added** together to give a score.
The table shows all possible scores.

- (a) Which score is the most likely?
- (b) Which scores are the least likely?
- (c) Write down the probability of scoring a
- (i) 3 (ii) 5 (iii) 6 (iv) 7
- (d) Write down the probability of scoring a number
- (i) over 10 (ii) under 7 (iii) 4 or less (iv) 6 or more
- (e) Write down the probability of scoring
- (i) an odd number (ii) a square number (iii) a prime number

		Dice 1					
+		1	2	3	4	5	6
Dice 2	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
	3	4	5	6	7	8	9
	4	5	6	7	8	9	10
	5	6	7	8	9	10	11
	6	7	8	9	10	11	12

Question 2: Two fair six sided dice are rolled.
The numbers on the two dice are **multiplied** together to give a score.

- (a) Complete the table to show all possible scores.
- (b) Write down the probability
- (i) 10 (ii) 9 (iii) 12 (iv) 8
- (c) Write down the probability of scoring
- (i) an even number (ii) an odd number
- (iii) a number less than 20

		Dice 1					
x		1	2	3	4	5	6
Dice 2	1						
	2						
	3						
	4						
	5						
	6						

Probability: Sample Spaces

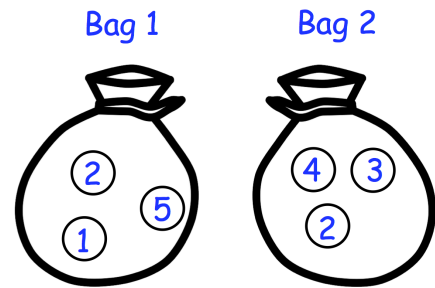
Video 246 on www.corbettmaths.com

Question 3: Two bags, 1 and 2, each contain three counters.
In bag 1, the counters are labelled 1, 2 and 5.
In bag 2, the counters are labelled 2, 3 and 4.

A counter is drawn at random from bag 1 and a counter is drawn from bag 2.

The two numbers are multiplied together to give a score

- Complete the table to show all possible scores
- Find the probability of scoring a 6
- Find the probability of scoring a multiple of 4
- Find the probability of scoring an odd number



		Bag 1		
	x	1	2	5
Bag 2	2			
	3			
	4			

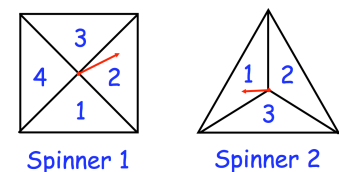
Question 4: Rose is playing a game with a fair six sided dice and a fair coin.
She rolls the dice and flips the coin.

If the coin lands on heads, her score is **one less** than the number on the dice.
If the coin lands on tails, her score is **two more** than the number on the dice

- Complete the table to show all possible scores
- Find the probability of scoring a 0
- Find the probability of scoring a 5
- Find the probability of scoring a number less than 4
- Find the probability of scoring a square number

		Dice					
		1	2	3	4	5	6
Coin	Heads						
	Tails						

Question 5: Two fair spinners are spun.
Spinner 1 has four equal sections labelled 1, 2, 3 and 4.
Spinner 2 has three equal sections labelled 1, 2 and 3.
Each spinner is spun once.
The score is the **difference** between the numbers



- Complete the table to show all possible scores
- Find the probability of scoring a 1
- Find the probability of scoring a 2 or more

		Spinner 1			
		1	2	3	4
Spinner 2	1	0	1	2	
	2	1			
	3	2			

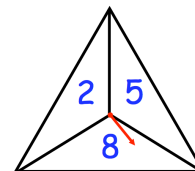
Apply

Question 1: Adam uses two fair spinners in a game.
He spins both spinners and **adds** the two numbers together.

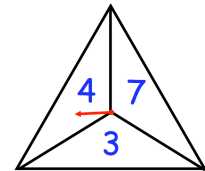
(a) Draw a table to show all possible scores

Adam thinks that the probability of an even score is $\frac{1}{2}$

(b) Explain why Adam is incorrect

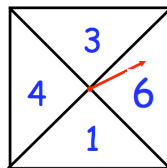


Spinner 1



Spinner 2

Question 2: Jessica is playing a game with a fair four sections spinner and a fair coin.
She spins the spinner and flips the coin.



Spinner



Coin

If the coin lands on heads, Jessica applies **rule 1** to the number on the spinner
If the coin lands on tails, Jessica applies **rule 2** to the number on the spinner

The table below shows some information about the scores that Jessica can get.

		Spinner			
		1	3	4	6
Coin	Heads	1	9		36
	Tails	3	7	9	13

(a) What could **rule 1** be?

(b) What could **rule 2** be?

(c) Complete the table

(d) Find the probability that Jessica scores a number less than 15

Question 3: Katie has organised a game to raise money for charity at a local fair.
The person playing rolls two fair six sided dice
The numbers on the dice are **multiplied** together.

Each person pays £1 to play.
If they score a square number, they win £3
The game is played 180 times.

How much money does Katie raise for charity?

Question 4: Two bags, 1 and 2, each contain equal size counters.

Bag 1 contains a pink counter, yellow counter and white counter
Bag 2 contains counters labelled 1, 4, 5 and 7.

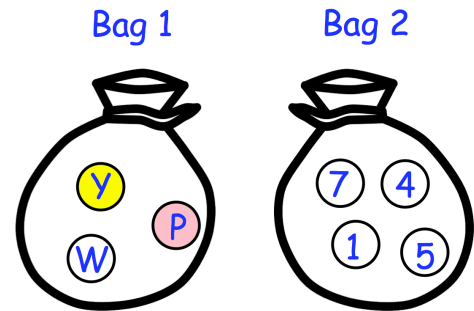
A counter is drawn at random from bag 1 and
a counter is drawn at random from bag 2.

If the counter from bag 1 is pink, the number on the
counter from bag 2 is **increased** by 1

If the counter from bag 1 is yellow, the number on the
counter from bag 2 is **decreased** by 5

If the counter from bag 1 is white, the number is **halved**.

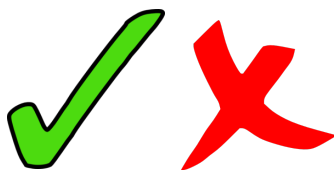
Find the probability of scoring a number below 3



Question 5: A fair dice has six faces numbered 1, 1, 1, 2, 3 and 4.
The dice is rolled twice and the number shown is recorded each time.
Find the probability that the sum of the two numbers recorded is at least 4.

Question 6: A fair six sided dice is rolled twice.
Find the probability that the number obtained on the first roll is at least 3
greater than the second roll

Answers



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