Sample space diagrams

Grade 4 | Foundation and Higher | 5 questions, 20 marks

GCSE Statistics topic practice

Name: _____ **Date:** _____ **Score:** _____ **/ 20**

1 Kofi flips a fair coin and spins a fair spinner numbered 1, 2, 3. One possible outcome is a head and a 1, written H1.

a. Complete the sample space diagram to show all the possible outcomes. (1)

b. Work out the probability that Kofi gets a head and an odd number. (1)

c. Work out the probability that Kofi gets a tail, or a 1, or both. (1)

Spinner

	1	2	3
Head (H)	H1		
Tail (T)			

(3 marks)

2 At a school summer fair, each player spins two fair spinners. Spinner A is numbered 1, 2, 3, 4. Spinner B is numbered 1, 3, 5. The score is the sum of the two numbers.

Score	B = 1	B = 3	B = 5
A = 1	2	4	6
A = 2	3		
A = 3			
A = 4			

a. Complete the sample space diagram. (1)

b. Work out the probability that a player scores exactly 6. (1)

c. A player wins a prize with a score of 7 or more. 150 people play the game. Work out an estimate for the number of prizes won. (2)

(4 marks)

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

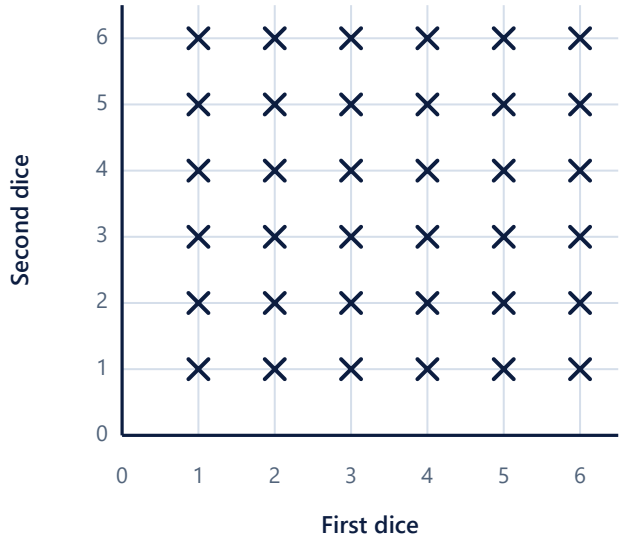
3 Two fair six-sided dice are rolled. The sample space diagram shows all the possible outcomes. Each cross is one outcome.

a. Write down the total number of possible outcomes. (1)

b. On the diagram, put a ring around each outcome that gives a total of 9. (1)

c. Work out the probability that the total is 9. (1)

d. Work out the probability that both dice show the same number. (1)



(4 marks)

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

4 Priya spins two fair spinners. Spinner A is numbered 1, 2, 3. Spinner B is numbered 2, 3, 4, 5. She multiplies the two numbers to get her score.

a. Complete the sample space diagram. (2)

b. Work out the probability that her score is an even number. (1)

c. Work out the probability that her score is greater than 8. (1)

Spinner B

Spinner A	×	2	3	4	5
	1	2	3	4	5
	2				
	3				

(4 marks)

---

5 Ali and Beth play a game. They roll two fair four-sided dice, each numbered 1, 2, 3, 4. The score is the difference between the two numbers.

Ali wins if the score is 0 or 1. Beth wins if the score is 2 or 3.

a. Complete the sample space diagram to show the scores. (2)

b. Is the game fair? You must give a reason for your answer. (2)

c. Ali and Beth play the game 80 times. Work out an estimate for the number of times Beth wins. (1)

Second dice

First dice	Score	1	2	3	4
	1	0	1	2	3
	2				
	3				
	4				

(5 marks)

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

End of questions | Total 20 marks

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.