5.3 Listing Outcomes and Sample Space Diagrams: 10-minute Pack

Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A bag has 2 red and 3 blue counters. Two counters are taken without replacement. Find the probability both are red.

(2)

2 Complete the sample space for a 4-sided die (1 to 4) rolled after a coin toss (coin then die). List all pairs (coin,die).

(2)

3 Spinner A lands equally on numbers 1, 2 or 3. Spinner B lands equally on letters X or Y. One spin of each is made.

(a) List the sample space. **(1)**

(b) Find the probability spinner A shows 3 and spinner B shows Y. **(1)**

4 Two fair six-sided dice are rolled. Work out the probability that both dice show the same number.

(3)

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Mark scheme · 5.3 Listing Outcomes and Sample Space Diagrams: 10-minute Pack

Question 1

method: first pick 2/5 then second pick 1/4 or count combinations C(2,2)/C(5,2)	**M1**
probability 2/5 x 1/4 = 2/20 = 1/10 cao	**A1**

Answer: **1/10**

Question 2

method pairing coin outcomes with die faces	**M1**
complete list: (H,1),(H,2),(H,3),(H,4),(T,1),(T,2),(T,3),(T,4) cao	**A1**

Answer: **(H,1), (H,2), (H,3), (H,4), (T,1), (T,2), (T,3), (T,4)**

Question 3

(a) all six ordered pairs listed cao	**B1**

(a) Answer: **(1,X), (1,Y), (2,X), (2,Y), (3,X), (3,Y)**

(b) 1 favourable outcome out of 6 so probability 1/6 cao	**B1**

(b) Answer: **1/6**

Question 4

sample space of 36 outcomes	**M1**
6 outcomes with a double	**M1**
1/6 cao	**A1**

Answer: **1/6**

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