

Summer Term Maths Year 10

Use Sample Space Diagrams to List Outcomes

1

Jo chooses a card from each of the boxes below.

She multiplies the numbers together.

a) Complete the sample space diagram.

| | | Bag 1 | | | | | |
|-------|---|-------|----|----|----|----|---|
| | | 1 | 2 | 2 | 3 | 4 | Bag 1 |
| Bag 2 | 1 | 1 | 2 | 2 | 3 | 4 |   |
| | 3 | 3 | 6 | 6 | 9 | 12 | |
| | 3 | 3 | 6 | 6 | 9 | 12 | |
| | 4 | 4 | 8 | 8 | 12 | 16 | |
| | 5 | 5 | 10 | 10 | 15 | 20 | |

- b) What is the probability she gets a score of 12? $\frac{3}{25}$
- c) What is the probability she gets a score less than 10? $\frac{17}{25}$

2

Ron is choosing his dinner from this menu. List all the combinations of starter, main and dessert he could choose.

| Menu | | |
|----------------|--|--|
| Starter | | |
| Soup | | |
| Melon | | |
| Main | | |
| Chicken | | |
| Fish | | |
| Vegetarian | | |
| Dessert | | |
| Cake | | |
| Jelly | | |

| Starter | Main | Dessert |
|---------|------------|---------|
| Soup | Chicken | Cake |
| Soup | Chicken | Jelly |
| Soup | Fish | Cake |
| Soup | Fish | Jelly |
| Soup | Vegetarian | Cake |
| Soup | Vegetarian | Jelly |
| Melon | Chicken | Cake |
| Melon | Chicken | Jelly |
| Melon | Fish | Cake |
| Melon | Fish | Jelly |
| Melon | Vegetarian | Cake |
| Melon | Vegetarian | Jelly |

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3 Amir flips a coin and rolls a die at the same time.

a) Complete the sample space diagram.

| | | Die | | | | | |
|------|---|-------|-------|-------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| Coin | H | (1,H) | (2,H) | (3,H) | (4,H) | (5,H) | (6,H) |
| | T | (1,T) | (2,T) | (3,T) | (4,T) | (5,T) | (6,T) |

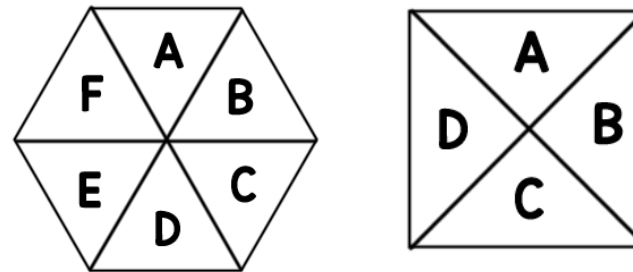
(b) If he gets heads and an even number he wins a prize.

Work out the probability Amir wins a prize.
 $\frac{3}{12} = \frac{1}{4}$

4 2 fair dice are rolled and the numbers are added together. Which score is the most likely to occur?

7 - more pairs of numbers on a die make 7 than any other number.

5 Mo spins these two spinners.



Find the probability

- (a) P(2 of the same letter chosen) $\frac{4}{24} = \frac{1}{6}$
 (b) P(at least one letter B is chosen) $\frac{9}{24} = \frac{3}{8}$

6 There are 4 possible pairs of combinations, therefore the probability of each combination is a quarter

| | H | T |
|---|-----|-----|
| H | H,H | H,T |
| T | T,H | T,T |