

## Listing Possible Outcomes

### Starter

1. **(Review of last lesson)** Tara asked 150 people in Ripon whether they were vegetarian and 9 responded that they were.
- State the relative frequency of the vegetarians in Ripon based on Tara's data.
  - There are 16000 inhabitants in Ripon. Estimate how many vegetarians there are.
  - Suggests reasons why your answer to (b) is incorrect.

**Working:** (a)  $\frac{9}{150} = \frac{3}{50}$

(b)  $\frac{3}{50} \times 16000 = 960$

- (c) The sample could be biased (e.g. asking people outside a vegetarian restaurant) or respondents could have lied

2. Two dice are rolled and the difference between the values is found.
- Copy and complete the sample space diagram below to show all outcomes.

DIFFERENCE		DICE 2					
		1	2	3	4	5	6
Dice 1	1	0					
	2			1		3	
	3						
	4						
	5	4					
	6				2		

- Using your sample space diagram, calculate the probability of getting:
  - a difference of zero
  - a difference of 1 or 2
  - a difference which is greater than 1

**Working:** (a)

DIFFERENCE		DICE 2					
		1	2	3	4	5	6
Dice 1	1	0	1	2	3	4	5
	2	1	0	1	2	3	4
	3	2	1	0	1	2	3
	4	3	2	1	0	1	2
	5	4	3	2	1	0	1
	6	5	4	3	2	1	0

(b) (i)  $P(0) = \frac{6}{36} = \frac{1}{6}$

(ii)  $P(1 \text{ or } 2) = \frac{10 + 8}{36} = \frac{1}{2}$

(iii)  $P(> 1) = \frac{20}{36} = \frac{5}{9}$

$$P(> 1) = 1 - P(\leq 1) = 1 - \frac{16}{36} = \frac{20}{36} = \frac{5}{9}$$

Video: [Listing outcomes](#)

Video: [Sample space diagrams](#)

[Solutions to Starter and E.g.s](#)

### Exercise

9-1 class textbook:

p238 M8.4 Qu 1-8

A\*-G class textbook:

p208 M8.4 Qu 3-10

9-1 homework book:

p81 M8.4 Qu 1-5

A\*-G homework book:

p59 M8.4 Qu 1-5

[Homework book answers \(only available during a lockdown\)](#)