

## 9.1 Mutually exclusive events

### Core

- 1 **a** Mutually exclusive                      **b** Not mutually exclusive  
**c** Mutually exclusive                      **d** Not mutually exclusive
- 2 **a** Students cannot attend more than one activity on one day.  
**b** **i** 0.3                      **ii** 0.7                      **iii** 0.55
- 3 **a** 0.4                      **b** 12
- 4 **a**  $\frac{3}{20}$                       **b** 48

### Depth

- 1 **a** A student cannot be in Year 7 and Year 8 at the same time.  
**b** 0.45                      **c** 0.35
- 2 The two probabilities are not mutually exclusive as a student can own a cat and a dog. This means the probabilities cannot be added together.
- 3  $x = 0.325$
- 4 **a** 0.35                      **b** 0.2  
**c** If there were 10 beads, the smallest probability would be 0.1, not 0.05. So there must be more than 10 beads.  
**d** 20

### Support

- 1 **b** 2, 4, 6                      **c** 1, 3, 5                      **d** 3, 6                      **e** 1, 2, 4                      **f** No  
**g** Yes, they are mutually exclusive as there are no common outcomes.  
**h** **i** False                      **ii** True
- 2 20%