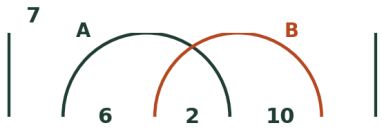
Venn Diagrams

Grade 5 topic · Foundation and Higher · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Foundation students: aim for Questions 1–15 (30 marks) and have a go at the rest. Higher students: complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 50 marks.

Warm-up

1 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. How many elements are in set A only? **[1 mark]**



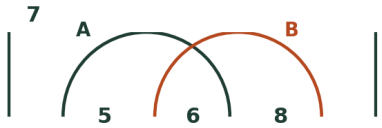
Answer _____

2 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out n(A ∩ B). **[1 mark]**



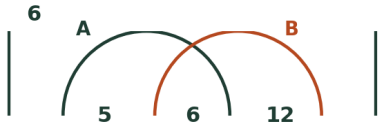
Answer _____

3 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out n(A ∪ B). **[1 mark]**



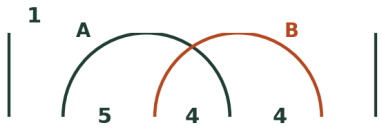
Answer _____

4 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. How many elements are in neither A nor B? **[1 mark]**



Answer _____

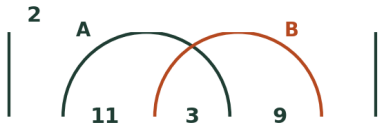
5 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out the total number of elements in the universal set. **[1 mark]**



Answer _____

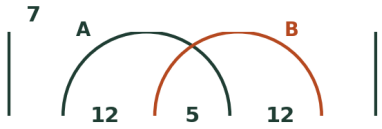
Core

6 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out n(A). **[2 marks]**



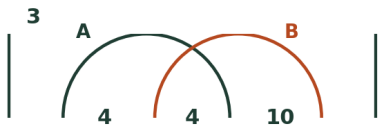
Answer _____

7 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out n(B). **[2 marks]**



Answer _____

8 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out n(A′). **[2 marks]**



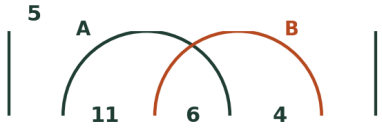
Answer _____

9 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. A number is chosen at random. Write down the probability that it is in A ∩ B. **[2 marks]**



Answer _____

10 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. A number is chosen at random. Write down the probability that it is in neither set. **[2 marks]**



Answer _____

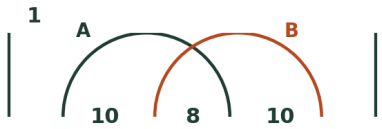
Stretch

11 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(A ∪ B). **[3 marks]**



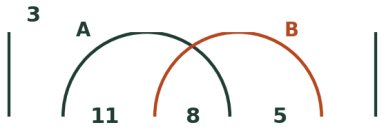
Answer _____

12 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(A′). **[3 marks]**



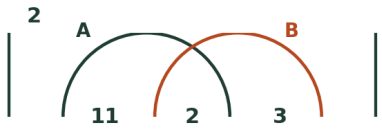
Answer _____

13 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(A only). **[3 marks]**



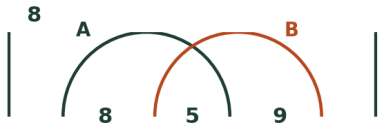
Answer _____

14 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(B′ ∩ A). **[3 marks]**



Answer _____

15 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(A ∩ B′). **[3 marks]**



Answer _____

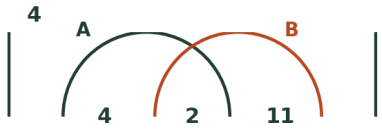
Challenge

16 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. An element in B is chosen at random. Work out the probability that it is also in A. **[4 marks]**



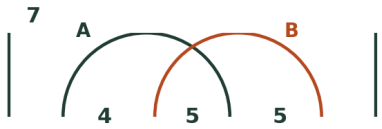
Answer _____

17 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. An element in A is chosen at random. Work out the probability that it is also in B. **[4 marks]**



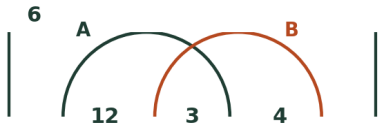
Answer _____

18 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(A ∩ B | A ∪ B). **[4 marks]**



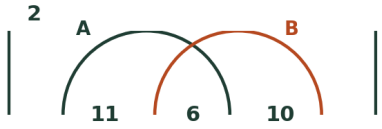
Answer _____

19 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Show that n(A ∪ B) = n(A) + n(B) − n(A ∩ B). **[4 marks]**



Answer _____

20 The Venn diagram shows the numbers of elements in sets A and B inside a universal set. Work out P(A | B′). **[4 marks]**



Answer _____