GCSE Exam Questions

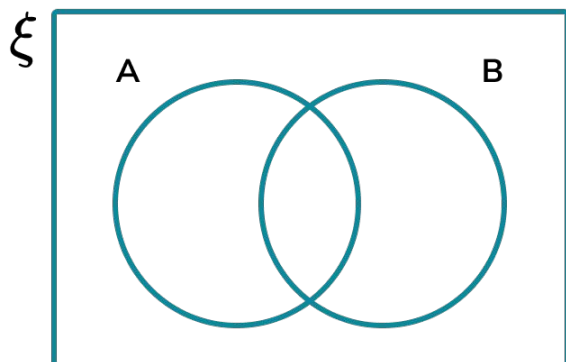## Venn Diagrams | Probability

THIRD SPACE
LEARNING

GCSE Exam Questions: Venn Diagrams

1) ξ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15}

Set A = multiples of 5

Set B = Prime numbers

(a) Complete the Venn diagram

(3)

(b) A number is picked at random.

Write down

(i) $P(A)$

----

(1)

(ii) $P(A \cup B)$

----

(1)

(5 marks)

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

1

GCSE Exam Questions: Venn Diagrams

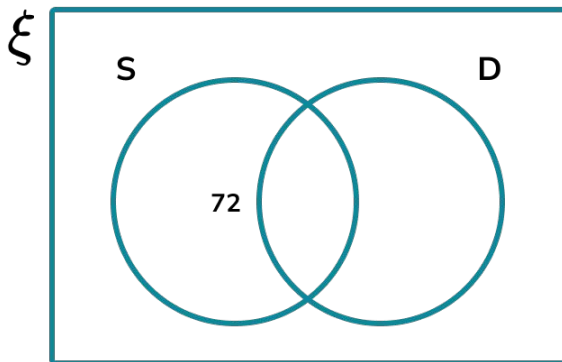**2)** **(a)** A restaurant is researching how many people eat a Starter (S) or a Dessert (D).

On one evening, the restaurant had 280 customers.

$\dfrac{1}{5}$ of customers do **not** eat a starter or a dessert,

72 had just a starter,

$\dfrac{3}{7}$ had both.

Complete the Venn diagram to represent this data.

(3)

(b) Calculate $P(S \cup D')$

- -

(2)

(5 marks)

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources
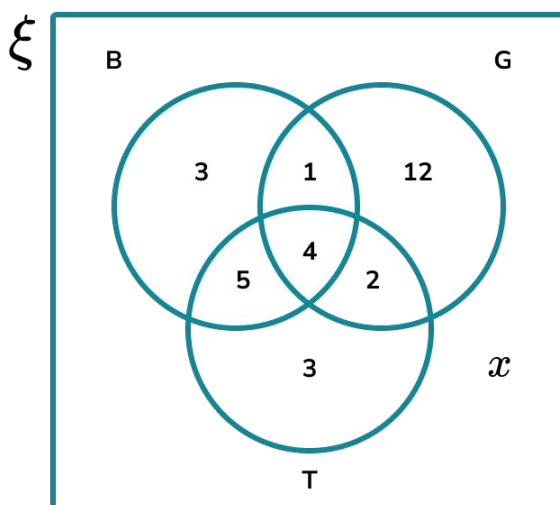
2

GCSE Exam Questions: Venn Diagrams

3) The Venn diagram below represents the following three sets for the 46 sports in the Olympic games:

B = {Ball sports}
G = {Gloves}
T = {Team}

(a) Find the value of *x*.

$x =$ _____
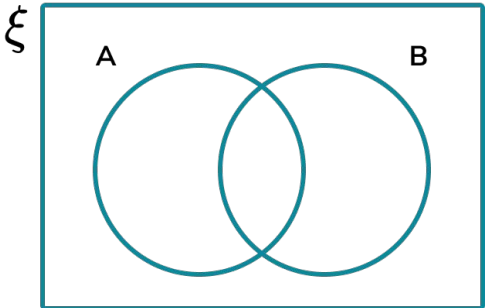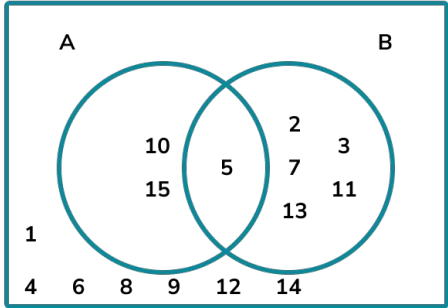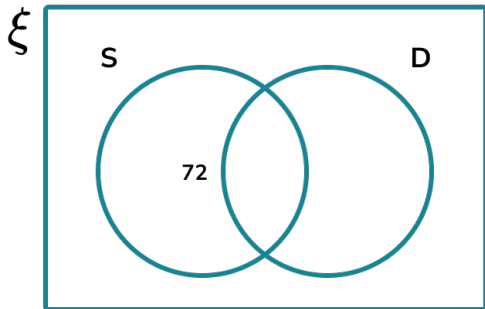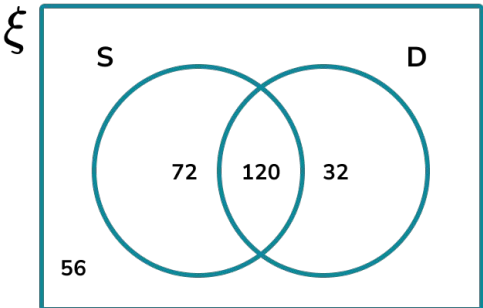
(2)

(b) Calculate B ∪ (G ∩ T).

_____

(2)

(4 marks)

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

3
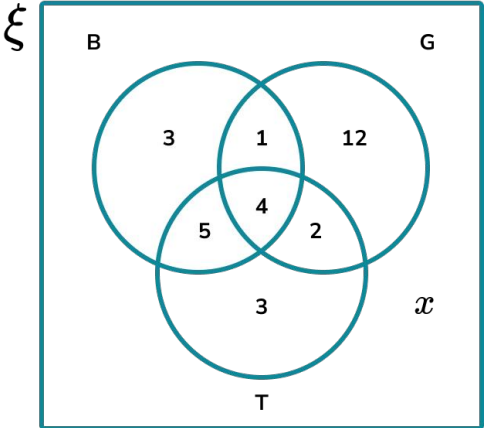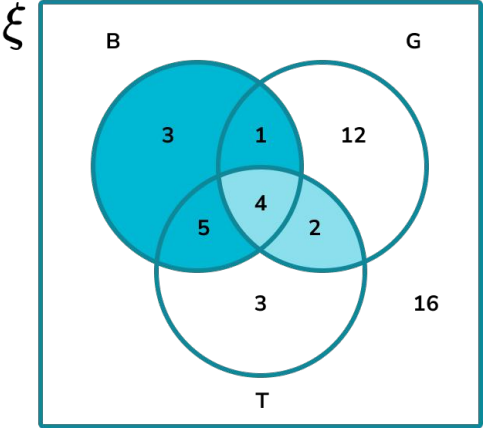
GCSE Exam Questions: Venn Diagrams Answers

	Question	Answer	Marks
1) (a)	ξ ={1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15} Set A = multiples of 5 Set B = Prime numbers Complete the Venn diagram ξ	**(a)** One region correct Two regions correct All regions correct	 **(1)** **(1)** **(1)**
(b)	A number is picked at random. Write down **(i)** $P(A)$ **(ii)** $P(A \cup B)$	**(b)** **(i)** $\dfrac{3}{15}$ or $\dfrac{1}{5}$ **(ii)** $\dfrac{8}{15}$	 **(1)** **(1)**
2) (a)	A restaurant is researching how many people eat a Starter (S) or a Dessert (D). On one evening, the restaurant had 280 customers. $\dfrac{1}{5}$ of customers do not eat a starter or a dessert, 72 had just a starter, and $\dfrac{3}{7}$ had both. Draw a Venn diagram to represent this data. ξ	**(a)** $280 \times \dfrac{1}{5} = 56$ $280 \times \dfrac{3}{7} = 120$ $280 - (56 + 72 + 120) = 32$ ξ	**(1)** **(1)** **(1)**
(b)	Calculate P(S∪D').	**(b)** S∪D' = 248 $P(S \cup D') = \dfrac{248}{280}$	**(1)** **(1)**

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

4

GCSE Exam Questions: Venn Diagrams Answers

	Question	Answer	Marks
3) (a)	The Venn diagram below represents the following three sets for the 46 sports in the Olympic games: B={Ball sports} G={Gloves} T={Team} Find the value of x	**(a)** $3 + 1 + 12 + 5 + 4 + 2 + 3 = 30$ 46 - 30 = 16	**(1)** **(1)**
(b)	Calculate $B \cup (G \cap T)$.	**(b)** $3 + 1 + 4 + 5 + 2$ **(1)** = 15	**(1)** **(1)**

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

5

Where to go next?

For more diagnostic questions, and GCSE maths revision resources and worksheets to support students in fixing any misconceptions take a look at the free Third Space Learning GCSE maths revision pages.

Scan the QR code to discover our library of FREE GCSE maths revision resources

Do you have KS4 students who need additional support in maths?

Our specialist tutors will help students to develop the skills they need to succeed at GCSE in weekly one to one online revision lessons. Trusted by secondary schools across the UK.

Visit thirdspacelearning.com to find out more.

THIRD SPACE
LEARNING