Name: SOLUTIONS

GCSE (1 - 9)

Venn Diagrams

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Solutions by
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These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk

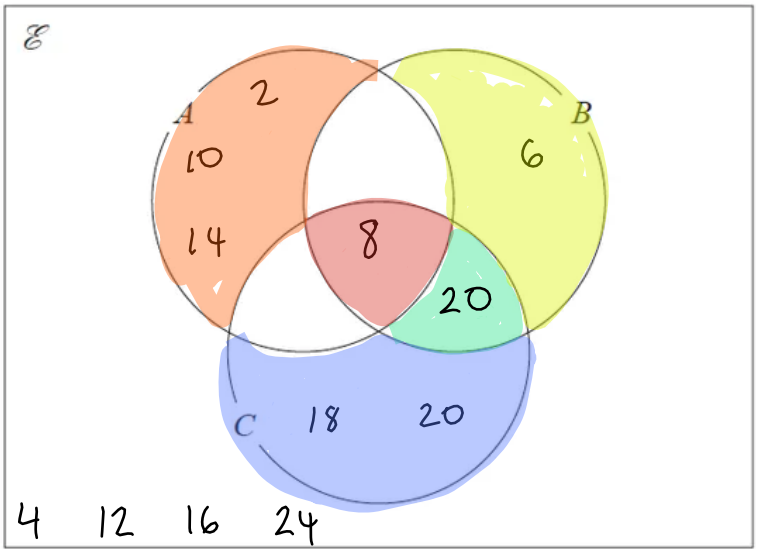
Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2018, Paper 2F, Q20 Edexcel, GCSE, Autumn 2018, Paper 2H, Q1
2	Edexcel, GCSE, Autumn 2019, Paper 3F, Q20
3	Edexcel, GCSE, Autumn 2020, Paper 2F, Q22 Edexcel, GCSE, Autumn 2020, Paper 2H, Q2
4	Edexcel, GCSE, Summer 2017, Paper 3F, Q15 Edexcel, GCSE, Summer 2017, Paper 3H, Q1
5	Edexcel, GCSE, Summer 2019, Paper 3F, Q24 Edexcel, GCSE, Summer 2019, Paper 3H, Q1
6	Edexcel, GCSE, Summer 2018, Paper 3H, Q20
7	Edexcel, GCSE, Summer 2023, Paper 1F, Q24

1

$\mathscr{E}$ = {even numbers between 1 and 25}
A = {2, 8, 10, 14}
B = {6, 8, 20}
C = {8, 18, 20, 22}

2 4 6 8 10
12 14 16 18 20
22 24

(a) Complete the Venn diagram for this information.



(4)

A number is chosen at random from $\mathscr{E}$.

(b) Find the probability that the number is a member of $A \cap B$.

$\frac{1}{12}$

(2)

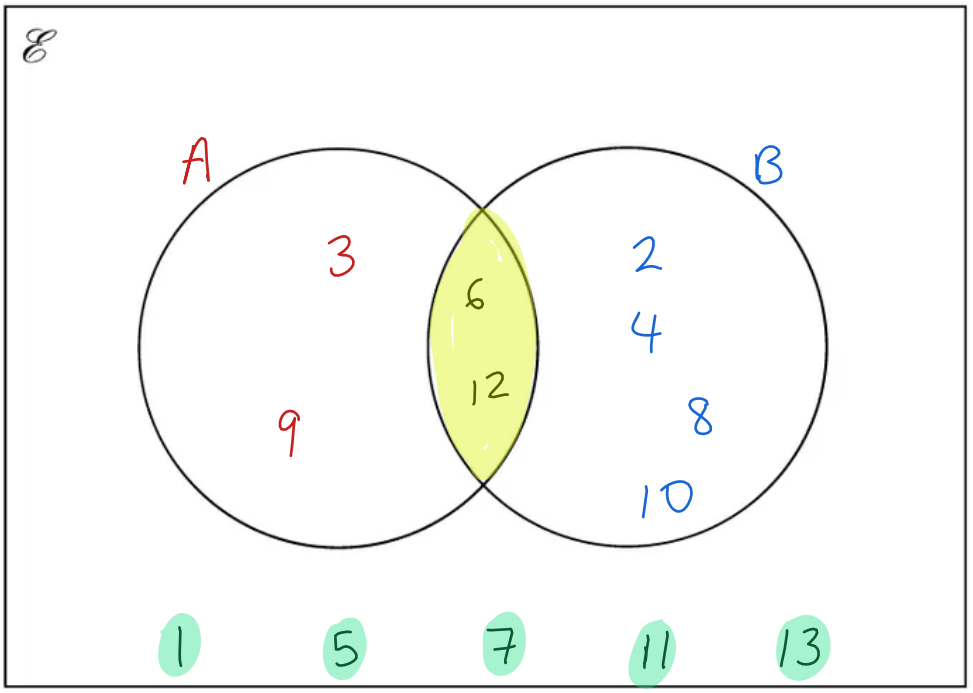
(Total for Question 20 is 6 marks)

[Edexcel, GCSE, Autumn 2018, Paper 2F, Q20
Edexcel, GCSE, Autumn 2018, Paper 2H, Q1*]*

2

$\mathscr{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13}
A = {multiples of 3} 3 6 9 12
B = {even numbers} 2 4 6 8 10 12

Complete the Venn diagram for this information.



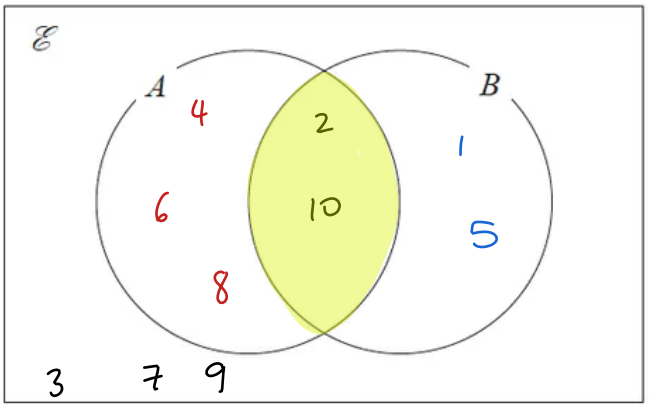
(Total for Question 20 is 4 marks)

[Edexcel, GCSE, Autumn 2019, Paper 3F, Q20]

3

$\mathscr{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
A = {even numbers} 2 4 6 8 10
B = {factors of 10} 1 2 5 10

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set, $\mathscr{E}$

(b) Find the probability that this number is in the set $A \cap B$

$\frac{2}{10}$

(2)

(Total for Question 22 is 5 marks)

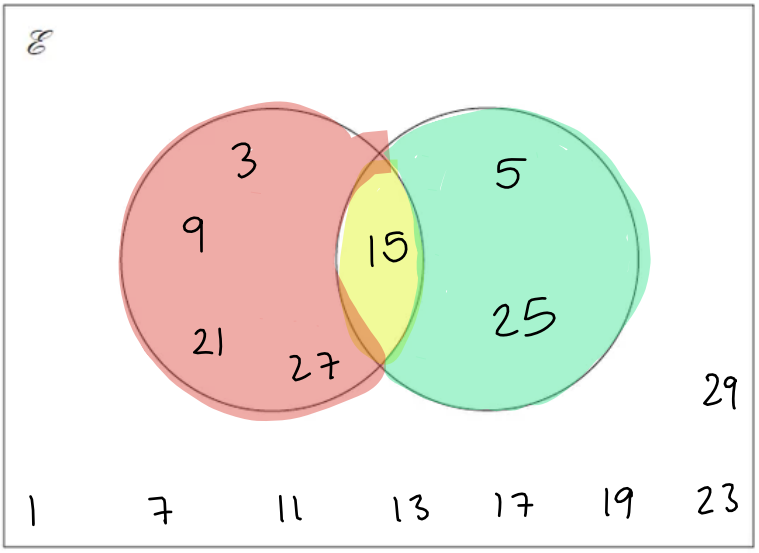
[Edexcel, GCSE, Autumn 2020, Paper 2F, Q22
Edexcel, GCSE, Autumn 2020, Paper 2H, Q2*]*

4

$\mathscr{E}$ = {odd numbers less than 30}
A = {3, 9, 15, 21, 27}
B = {5, 15, 25}

1 3 5 7 9
11 13 15 17 19
21 23 25 27 29

(a) Complete the Venn diagram to represent this information.



(4)

A number is chosen at random from the universal set, $\mathscr{E}$.

(b) What is the probability that the number is in the set $A \cup B$?

$\frac{7}{15}$

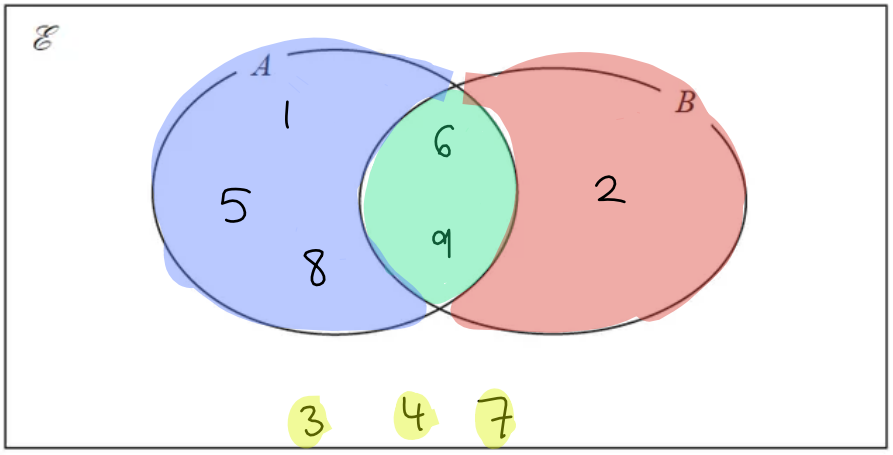
(2)

(Total for Question 15 is 6 marks)

[Edexcel, GCSE, Summer 2017, Paper 3F, Q15
Edexcel, GCSE, Summer 2017, Paper 3H, Q1*]*

5

$\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$
$A = \{1, 5, 6, 8, 9\}$
$B = \{2, 6, 9\}$



(a) Complete the Venn diagram to represent this information.

(3)

A number is chosen at random from the universal set $\mathscr{E}$.

(b) Find the probability that the number is in the set $A \cap B$

$\frac{2}{9}$

(2)

(Total for Question 24 is 5 marks)

[Edexcel, GCSE, Summer 2019, Paper 3F, Q24
Edexcel, GCSE, Summer 2019, Paper 3H, Q1*]*

6

50 people were asked if they speak French or German or Spanish.

Of these people,

31 speak French

2 speak French, German and Spanish

4 speak French and Spanish but not German

7 speak German and Spanish 7 - 2 = 5

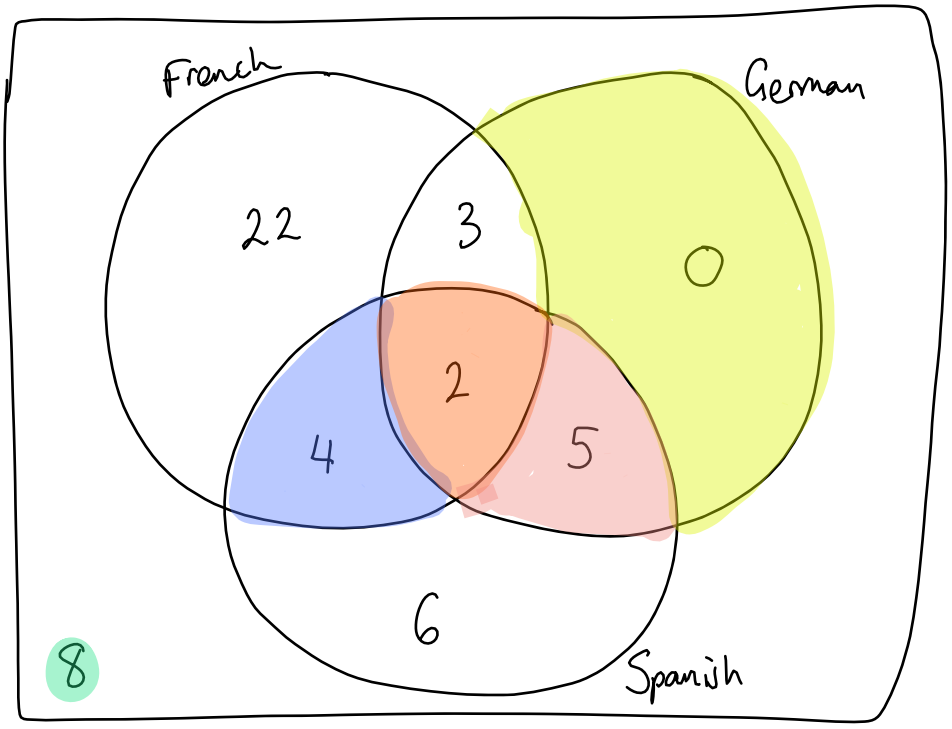
8 do not speak any of the languages

all 10 people who speak German speak at least one other language

So zero people speak only German

Two of the 50 people are chosen at random.

Work out the probability that they both only speak Spanish.



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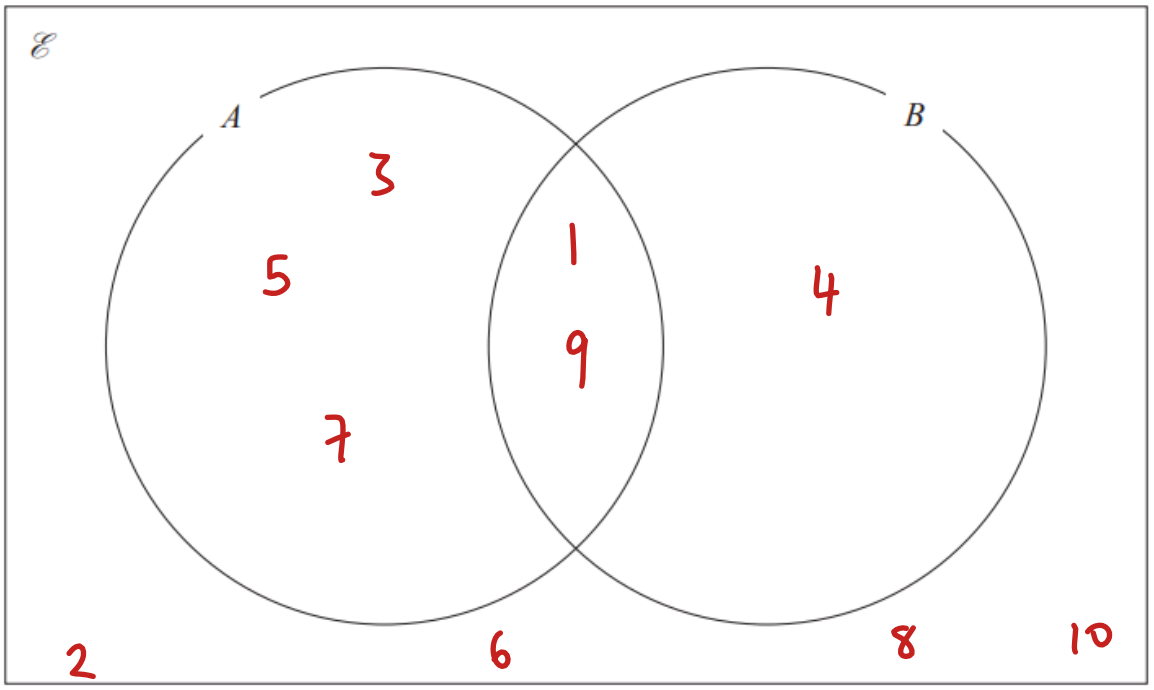
(Total for Question 20 is 5 marks)

[Edexcel, GCSE, Summer 2018, Paper 3H, Q20]

7

$\mathscr{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
A = {odd numbers} 1, 3, 5, 7, 9
B = {square numbers} 1, 4, 9

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set $\mathscr{E}$

(b) Find the probability that this number is in the set B' not B

7/10

(2)

(Total for Question 24 is 5 marks)

[Edexcel, GCSE, Summer 2023, Paper 1F, Q24]