Venn diagrams

Grade 4 | Foundation and Higher | 5 questions, 20 marks

GCSE Statistics topic practice

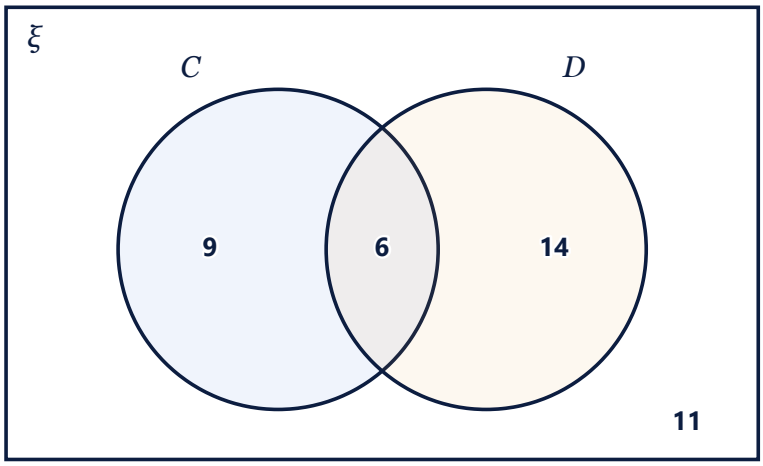
Name: _____ **Date:** _____ **Score:** _____ **/ 20**

1 The Venn diagram shows information about the pets owned by 40 students. C is the students who own a cat. D is the students who own a dog.

a. How many of the students own a dog? (1)

b. How many of the students own a cat or a dog or both? (1)

c. One of the students is chosen at random. Write down the probability that this student owns a cat but not a dog. (1)



(3 marks)

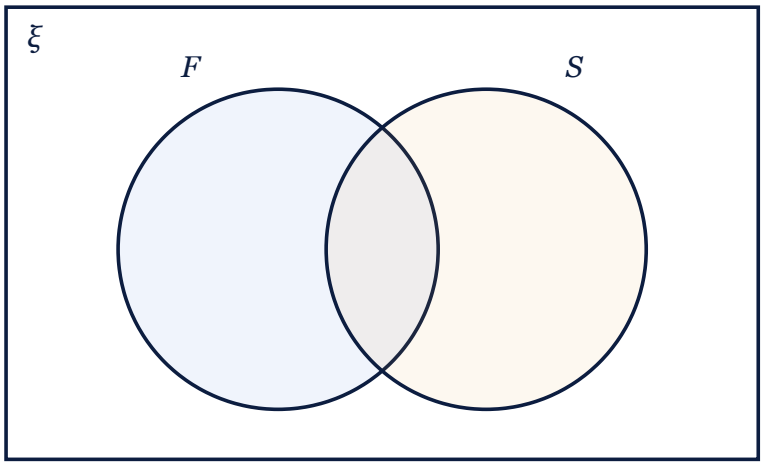
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2 A youth club has 60 members. 30 of the members play football (F). 24 of the members swim (S). 10 of the members do both.

a. Complete the Venn diagram. (2)

b. One member is chosen at random. Work out the probability that this member swims but does not play football. (1)

c. Work out the probability that a member chosen at random plays football or swims or does both. (1)



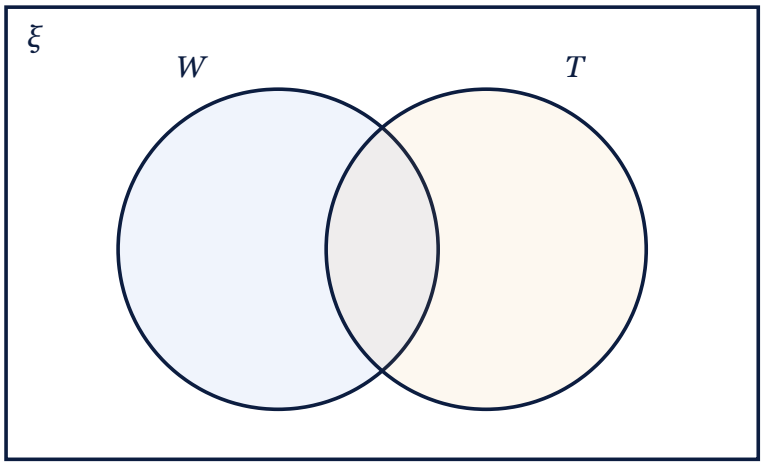
(4 marks)

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3 50 people use a gym one evening. 28 of them use the weights (W). 25 of them use a treadmill (T). 8 of them use neither the weights nor a treadmill.

a. Complete the Venn diagram. (3)

b. One of the 50 people is chosen at random. Work out the probability that this person uses exactly one of the weights and a treadmill. (1)



(4 marks)

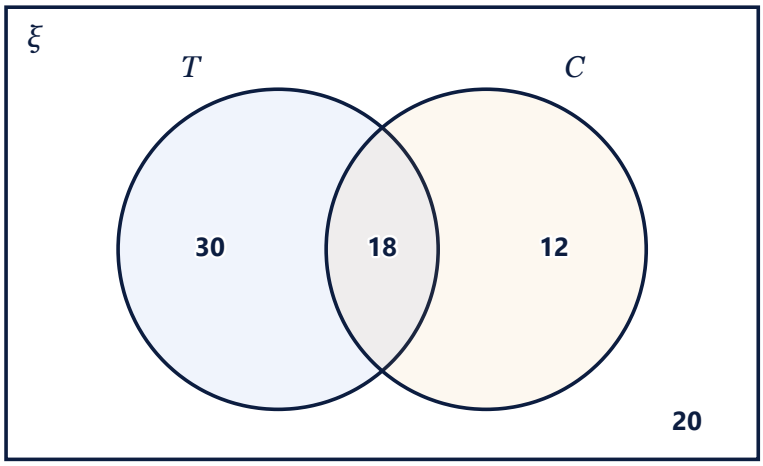
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4 The Venn diagram shows information about what 80 customers bought at a cafe. T is the customers who bought tea. C is the customers who bought cake.

a. One customer is chosen at random. Work out the probability that this customer bought tea. (1)

b. Work out the probability that a customer chosen at random bought tea or cake but not both. (1)

c. The owner says, "More than half of the customers who bought cake also bought tea." Is the owner correct? You must show your working. (2)



(4 marks)

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5 A teacher asks a sample of 60 Year 10 students which languages they study. The two-way table shows the results.

	Studies Spanish	**Does not study Spanish**
Studies French	9	21
Does not study French	18	12

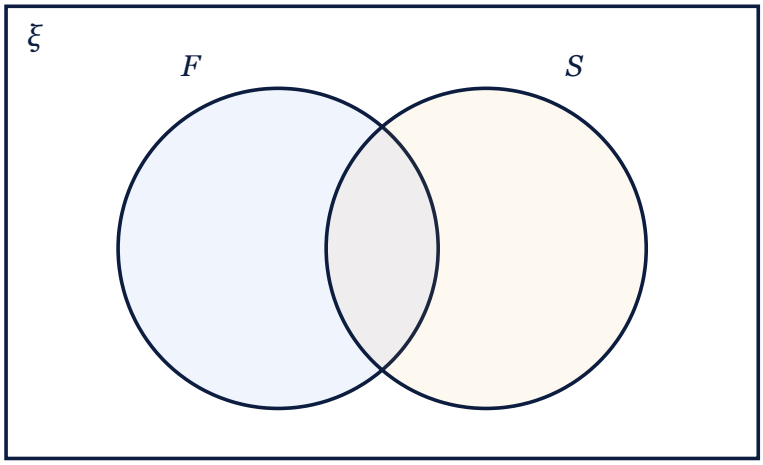
F is the students who study French. S is the students who study Spanish.

a. Complete the Venn diagram. (2)

b. One of the 60 students is chosen at random. Work out the probability that this student studies only one of the two languages. (1)

c. There are 240 students in Year 10. Work out an estimate for the number of Year 10 students who study both French and Spanish. (1)

d. Write down one assumption you made in part (c). (1)



(5 marks)

End of questions | Total 20 marks

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