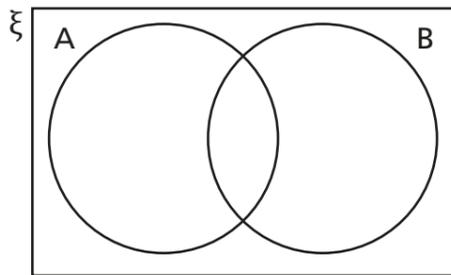


# Understand and use the intersection of sets

1 Here are two sets: A and B.



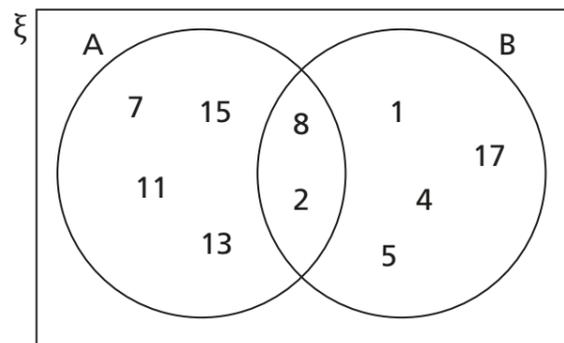
- a) Shade the region that represents  $A \cap B$ .
- b) Describe what  $A \cap B$  means.

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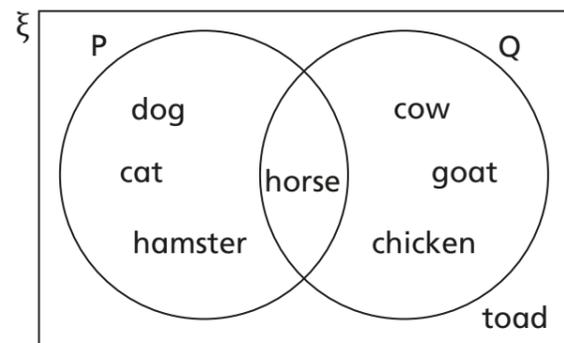
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2 a)



Write the elements of  $A \cap B$ . \_\_\_\_\_

b)

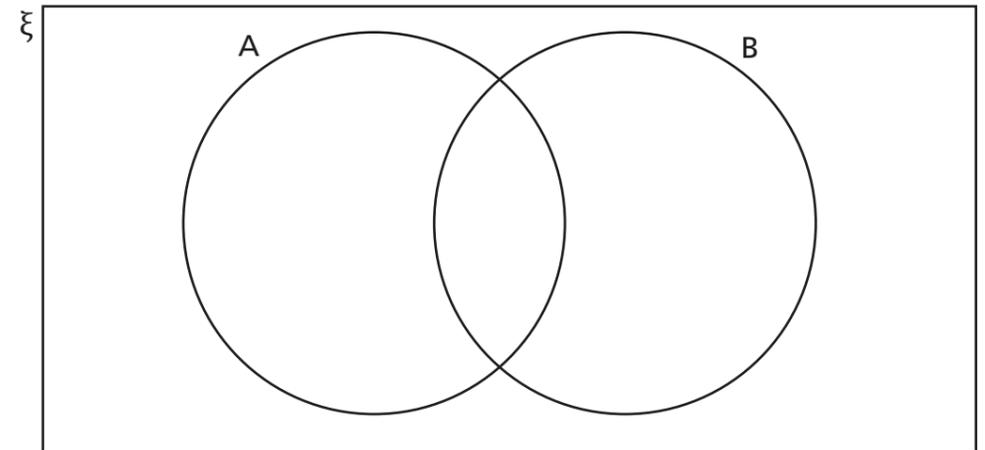


Write the element of  $P \cap Q$ . \_\_\_\_\_

3

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

a) Complete the Venn diagram to show the information.



b) Use your Venn diagram to work out  $A \cap B$ . \_\_\_\_\_

c) Which description best describes the elements of  $A \cap B$ ?

Tick your answer.

- square numbers
- odd square numbers
- even numbers
- odd numbers

4

$A = \{0, 5, 10, 15, 20, 25, 30\}$   
 $B = \{0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$

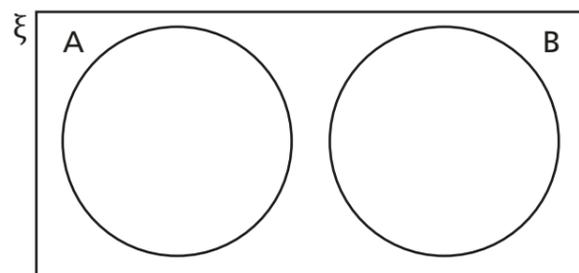
a) Work out the elements of  $A \cap B$ . \_\_\_\_\_

b) Discuss with a partner how to describe the members of  $A \cap B$ .



- 5 Explain why the Venn diagram represents the information.

$\xi = \{\text{letters of the alphabet}\}$   
 $A = \{\text{consonants}\}$   
 $B = \{\text{vowels}\}$

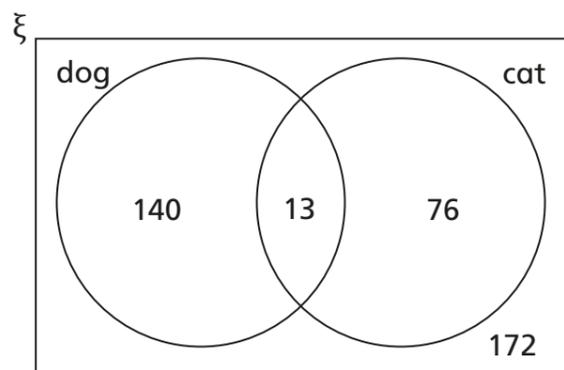



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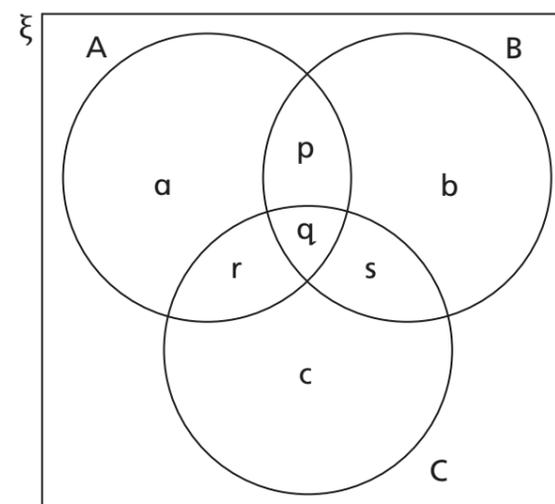
- 6 The Venn diagram shows the number of students in a school who own a cat or a dog.



- a) How many students own a cat and a dog?
- b) How many students own a dog?
- c) How many students do not own a cat?

- 7 Here are three sets: A, B and C.

Some letters have been placed in different regions.



List the elements of:

- a)  $A \cap B = \{\text{_____}\}$
- b)  $B \cap C = \{\text{_____}\}$
- c)  $A \cap C = \{\text{_____}\}$
- d)  $(A \cap B) \cap C = \{\text{_____}\}$

- 8 60 people were asked whether they liked tea and coffee. The results are shown in the two-way table.

	Like	Do not like
Tea	41	19
Coffee	38	22

27 people like both tea and coffee.

- a) Draw a Venn diagram to represent this information.

- b) How many people do not like tea or coffee?