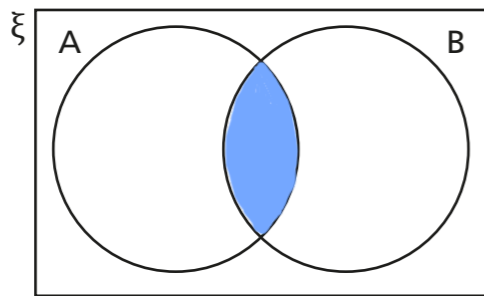


Understand and use the intersection of sets

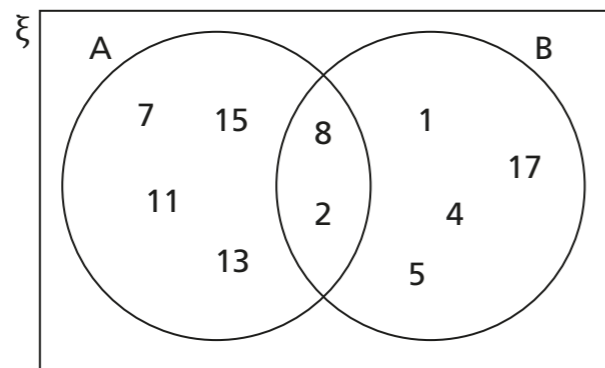
1 Here are two sets: A and B.



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

It's the set containing all the elements that are in set A AND set B.

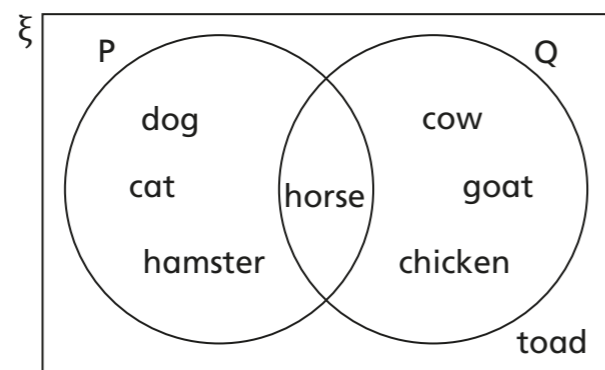
2 a)



Write the elements of $A \cap B$.

2, 8

b)



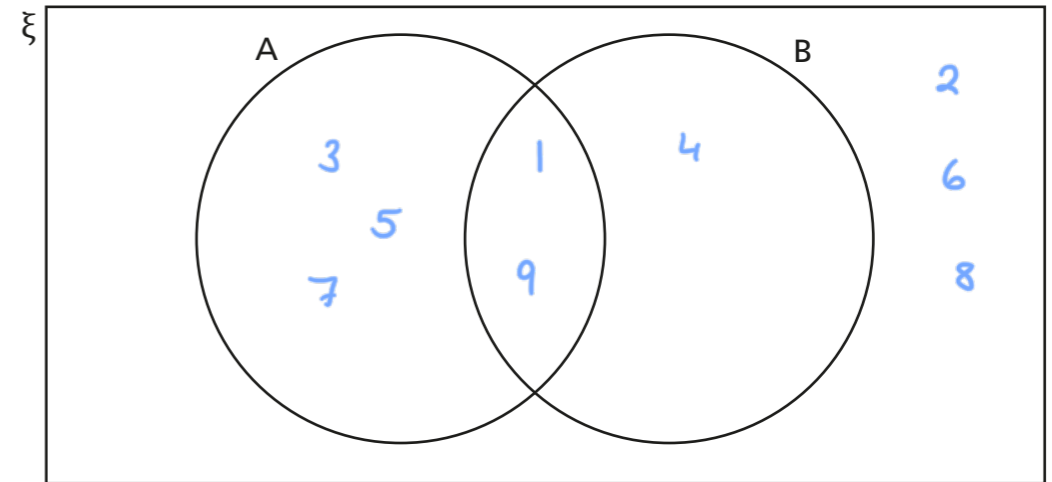
Write the element of $P \cap Q$.

horse

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 $A \cap B$.

1, 9

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 $A \cap B$.

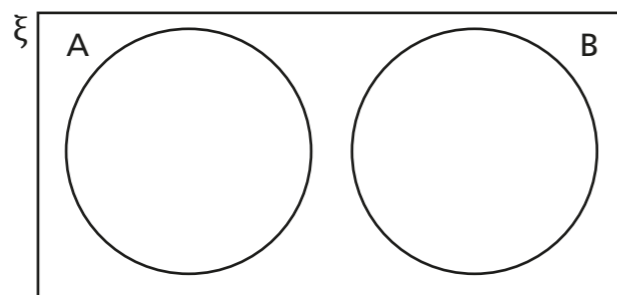
0, 10, 20

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



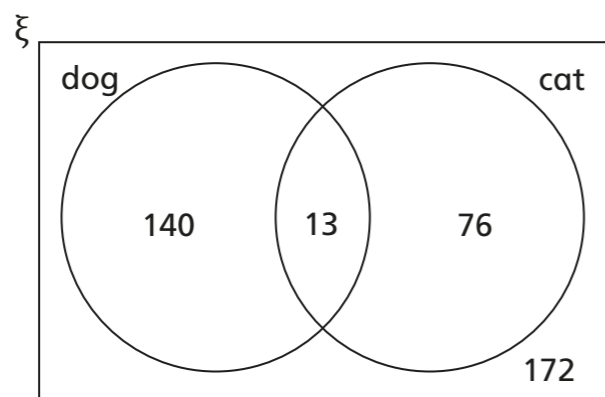
- 5 Explain why the Venn diagram represents the information.

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



There is no intersection. A letter is either a vowel or a consonant, it can't be both.

- 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?

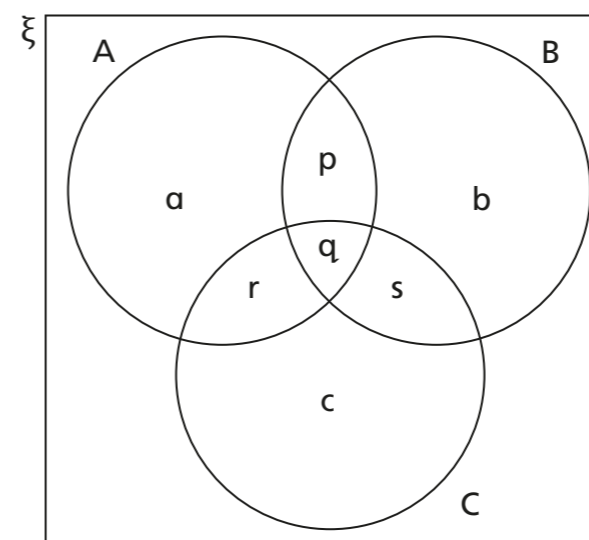
13

153

312

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

Some letters have been placed in different regions.



List the elements of:

a) $A \cap B = \{p, q\}$

c) $B \cap C = \{q, s\}$

b) $A \cap C = \{q, r\}$

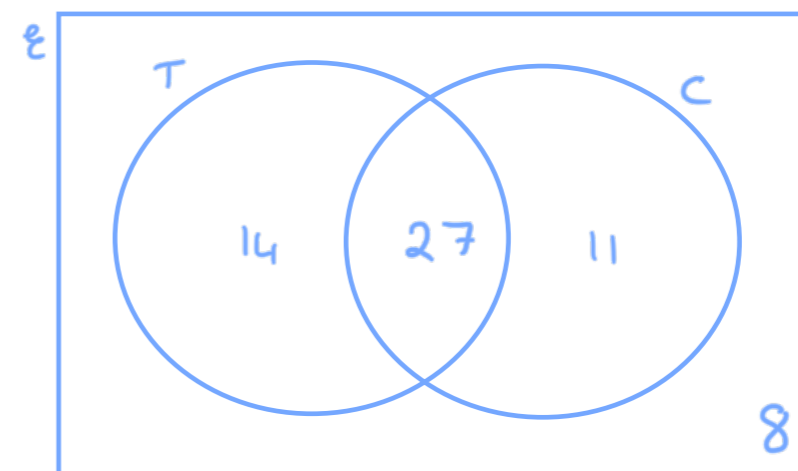
d) $(A \cap B) \cap C = \{q\}$

- 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?

8