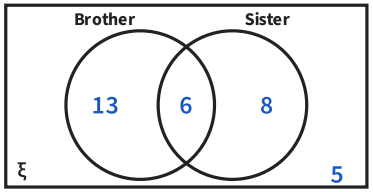
Completing Venn Diagrams

ANSWERS

1

32 students were asked about their families. 19 have a brother, 14 have a sister and 6 have both. Complete the Venn diagram.



both 6

brother only 19 − 6 = 13

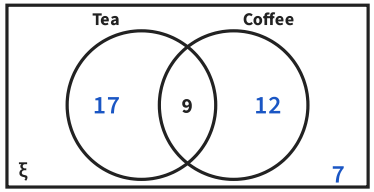
sister only 14 − 6 = 8

neither 32 − 27 = 5

Check 13 + 6 + 8 + 5 = 32

2

45 people were asked about hot drinks. 26 drink tea, 21 drink coffee and 9 drink both. Complete the Venn diagram.



both 9

tea only 26 − 9 = 17

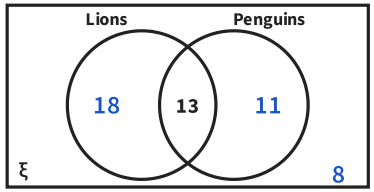
coffee only 21 − 9 = 12

neither 45 − 38 = 7

Check 17 + 9 + 12 + 7 = 45

3

50 visitors went to a zoo. 31 saw the lions, 24 saw the penguins and 13 saw both. Complete the Venn diagram.



both 13

lions only 31 − 13 = 18

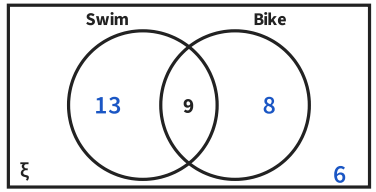
penguins only 24 − 13 = 11

neither 50 − 42 = 8

Check 18 + 13 + 11 + 8 = 50

4

36 children were asked what they can do. 22 can swim, 17 can ride a bike and 9 can do both. Complete the Venn diagram.



both 9

swim only 22 − 9 = 13

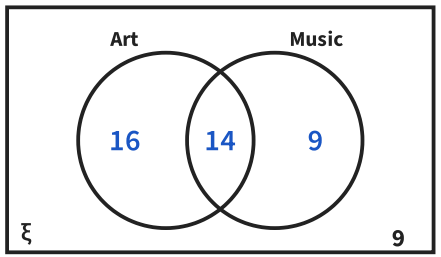
bike only 17 − 9 = 8

neither 36 − 30 = 6

Check 13 + 9 + 8 + 6 = 36

5

48 students choose their options. 30 take art, 23 take music and 9 take neither. Complete the Venn diagram.



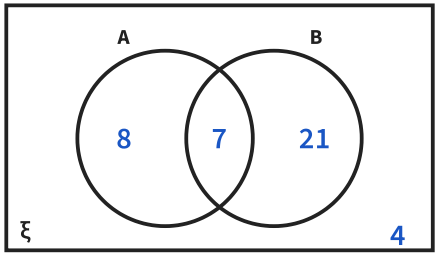
48 − 9 = 39 inside

30 + 23 = 53, so 53 − 39 = 14 both

Check 16 + 14 + 9 + 9 = 48

6

ξ = 40 people. A = people who own a bike. B = people who own a car. 15 own a bike, 28 own a car and 7 own both. Complete the Venn diagram. How many people are in A ∪ B?

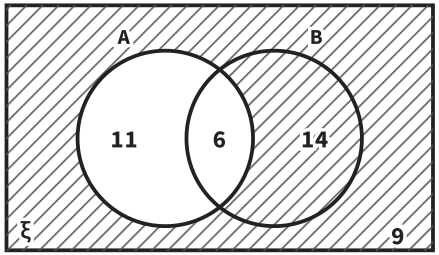


8 + 7 + 21 + 4 = 40

A ∪ B 36

7

The Venn diagram shows how many are in each region. How many are in A ∩ B? How many are in A′?

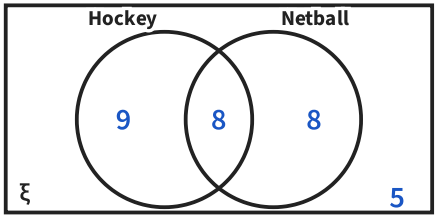


A ∩ B 6

A′ 14 + 9 = 23

8

30 students: 17 play hockey, 16 play netball and 8 play both. Sam writes 17, 8 and 16 in the circles. Explain Sam's mistake. Then complete the Venn diagram.



17 + 8 + 16 = 41, more than 30

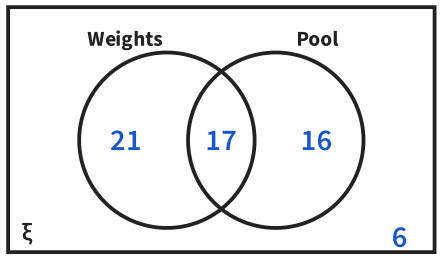
Mistake the 8 are counted twice

Completing Venn Diagrams *further practice*

ANSWERS

9

60 members of a gym were asked what they use. 38 use the weights, 33 use the pool and 6 use neither.
Complete the Venn diagram.

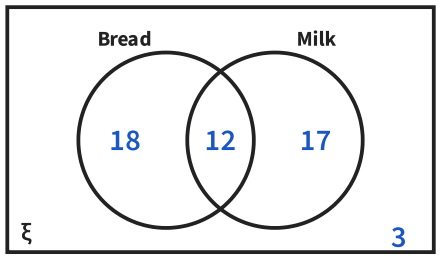


60 − 6 = 54, 71 − 54 = 17 both

Check *21 + 17 + 16 + 6 = 60*

10

50 shoppers: 18 bought only bread, 12 bought bread and milk, and 29 bought milk. Complete the Venn diagram.

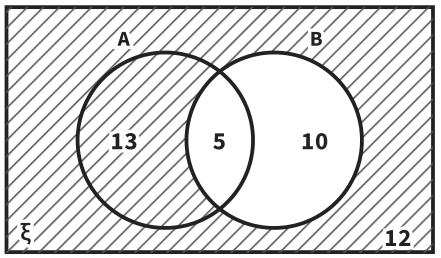


29 − 12 = 17 milk only

Check *18 + 12 + 17 + 3 = 50*

11

The Venn diagram shows how many are in each region. How many are in B′?

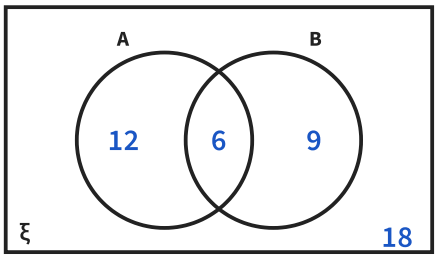


not in B: outside circle B

B′ *13 + 12 = 25*

12

ξ = 45 people. 27 are in A ∪ B. 12 are in A only and 9 are in B only.
Complete the Venn diagram.

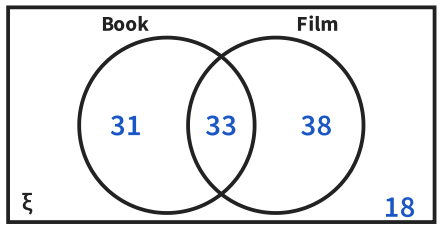


27 − 12 − 9 = 6 both, 45 − 27 = 18

Check *12 + 6 + 9 + 18 = 45*

13

120 people were asked about a story.
64 have read the book, 71 have seen the film and 18 have done neither.
How many have read the book and seen the film?

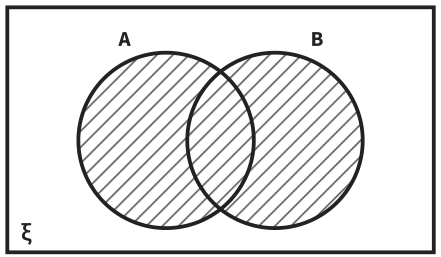


120 − 18 = 102, 135 − 102 = 33

Answer *33*

14

Write the shaded region in set notation.

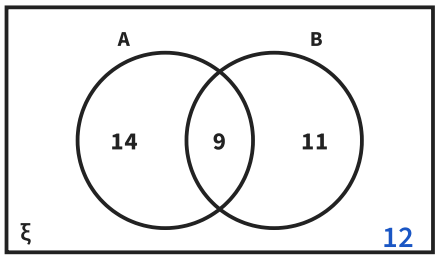


inside A or B or both

Answer *A ∪ B*

15

In a Venn diagram, 14 are in A only, 9 are in A ∩ B and 11 are in B only. There are 23 in A′.
How many are in ξ altogether?



23 − 11 = 12 neither

Answer *46*

16

A club has 40 members. 23 play chess and 21 play draughts. Lucy says at least 4 members must play both.
Is Lucy right? Explain.

23 + 21 = 44, 4 more than 40, so at least 4 counted twice

Answer *Yes*