

Intermediate Numeracy Nov 2017 P2 Q2

The Headteacher of Ysgol Maes Newydd gave *option forms* to all Year 9 pupils.

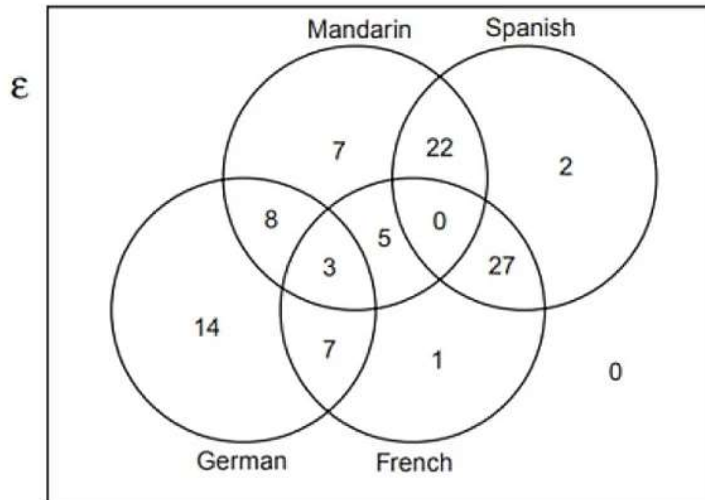
The form asked which foreign languages the pupils would like to study in Year 10.

There were 4 languages listed on the form: French, German, Spanish and Mandarin.

The pupils could select as many of the languages as they wished.

All pupils completed and returned the *option form*.

The Headteacher displayed the results in a Venn diagram, as shown below.



- (a) How many pupils did not select at least one of the four languages?
Circle your answer. [1]

0 1 3 5 7

- (b) How many pupils are there in Year 9?
Circle your answer. [1]

92 94 96 98 100

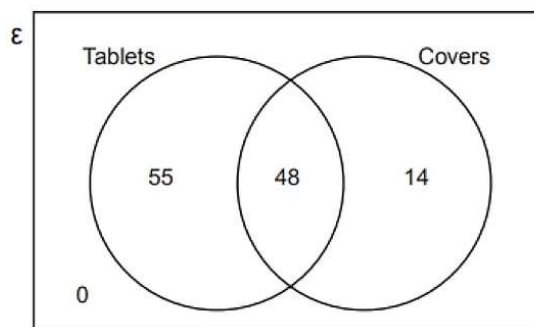
- (c) How many pupils selected only one language? [1]
- (d) Which was the most popular language selected?
You must show all your working. [3]
- (e) The Headteacher can offer only 2 out of these 4 languages in Year 10.
She writes the timetable so that as many as possible of the pupils who chose 2 languages are able to study those 2 languages.
Which **two** languages will the Headteacher offer in Year 10?
You must show all your working and give a reason for your answer. [2]

Intermediate Numeracy Nov 2018 P2 Q3

Airand Electronics only sells digital tablets and covers.



The Venn diagram shows the number of items sold by *Airand Electronics* during the first week in May.



Each tablet was sold for £220.
Each cover was sold for £18.

How much money in total did *Airand Electronics* take in the first week of May?

You must show all your working.

[3]

Intermediate Maths Summer 2019 P1 Q6

A Venn diagram is used to show the following information:

- The Universal set, \mathcal{E} , is the set of numbers from 10 to 20 inclusive.
- Set A = {11, 13, 14, 18, 20}.
- Set B = {multiples of 3}.

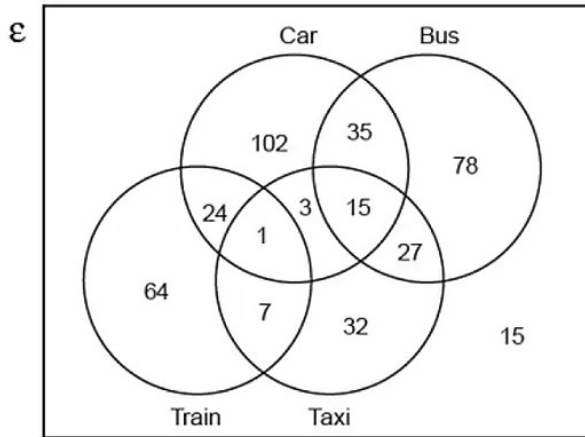
Draw the Venn diagram that shows the above information.

[4]

Intermediate Numeracy Summer 2019 P2 Q6a

(a) Rhian carried out a survey before an international rugby match. She asked a number of Wales supporters how they travelled to the match.

Rhian displayed her results in a Venn diagram, as shown below.



(i) How many of these supporters' journeys included travel by both train and taxi? Circle your answer. [1]

- 1 3 7 8 10

(ii) How many of these supporters' journeys included travel by car? Circle your answer. [1]

- 19 78 102 180 195

(iii) Calculate the percentage of the number of supporters in the survey whose journeys did **not** include any travel by car, bus, train, or taxi. Give your answer correct to 1 decimal place. [4]

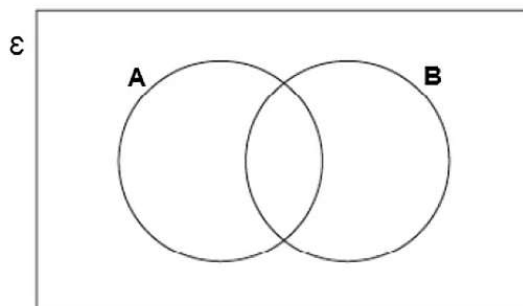
Intermediate Maths Sample 1 P2 Q7

The universal set, $\mathcal{E} = \{6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18\}$

Set A is the multiples of 3.

Set B is the multiples of 4.

(a) Complete the Venn diagram. [4]



(b) What is the probability that a number selected at random from this universal set is a multiple of 3 but not a multiple of 4? [2]

Intermediate Numeracy Sam 1 P1 Q7

200 visitors to Cardiff completed a questionnaire.

All 200 visitors had visited at least one of the following attractions: Cardiff Castle, the Millennium Stadium and Cardiff Bay.

25 of the visitors had visited Cardiff Castle and the Millennium Stadium and, of these, 15 had visited all three attractions.

91 of the visitors had visited the Millennium Stadium.

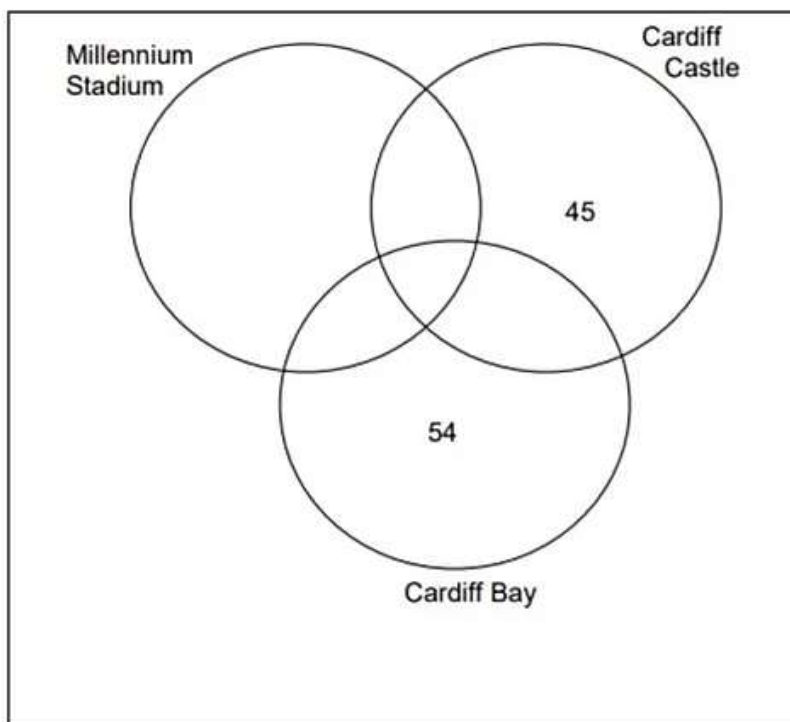
88 had visited Cardiff Castle.

101 had visited Cardiff Bay.

Some further information is given on the Venn diagram below.

How many visitors had visited the Millennium Stadium but not Cardiff Castle or Cardiff Bay?

[5]



Intermediate Maths Nov 2018 P2 Q11

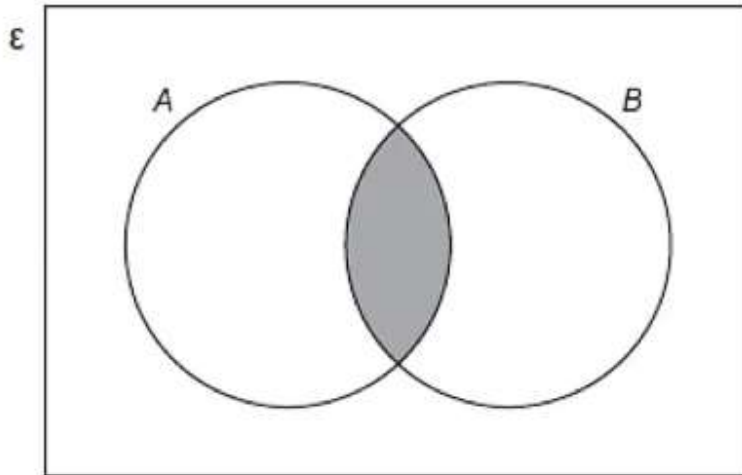
Display the following information in a Venn diagram.

[3]

- Universal Set (ϵ): Integers between 74 and 80 inclusive.
- Set A: Even numbers.
- Set B: Multiples of 3.

Intermediate Maths Summer 2019 P2 Q11

(a)



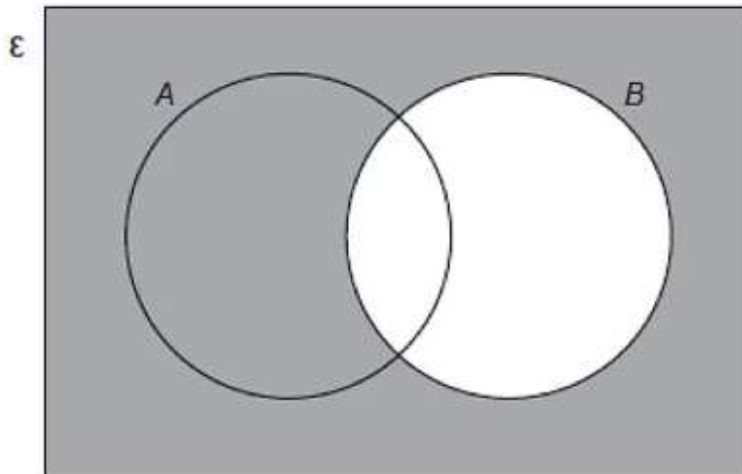
Which of the following sets represents the shaded area in the Venn Diagram shown above?

Circle your answer.

[1]

A' $A \cup B$ B' $A \cap B$ $A' \cap B$ $A \cup B'$

(b)



Which of the following sets represents the shaded area in the Venn Diagram shown above?

Circle your answer.

[1]

A' $A \cup B$ B' $A \cap B$ $A' \cap B$ $A \cup B'$

Intermediate Maths Summer 2018 P1 Q11

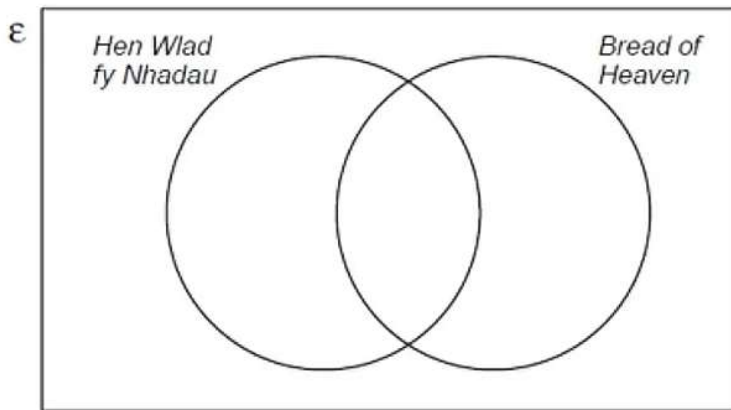
30 rugby supporters travel to Cardiff on a coach.

They decide to investigate how many of them can sing one, or both, of the songs 'Hen Wlad fy Nhadau' and 'Bread of Heaven'.

- 12 say they can sing both songs.
- 18 say they can sing 'Bread of Heaven'.
- 5 say they cannot sing either of the songs.

- (a) Complete the Venn diagram below to show this information.
The universal set, ϵ , contains all of the 30 supporters on the coach.

[3]



- (b) One of these supporters is chosen at random.
What is the probability that this person can sing 'Hen Wlad fy Nhadau'?

[2]

Intermediate Maths Sample 2 P2 Q13

A total of 45 councillors make up the Planning, Finance and Education committees of a local council.

Some of the councillors sit on two of these committees.

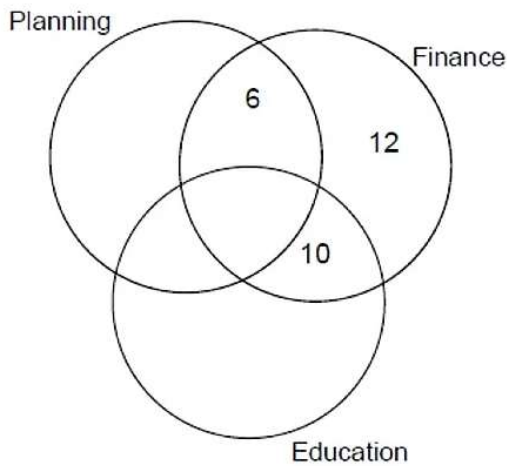
No councillor sits on all three committees.

2 councillors sit on both the Planning Committee and the Education Committee.

There are 18 councillors on the Education Committee.

- (a) Complete the Venn diagram.

[3]



(b) How many councillors sit on both the Planning and Finance committees?

[1]

(c) One of these 45 councillors is chosen at random.
What is the probability that this councillor is on the Planning Committee?

[2]

Intermediate Maths Nov 2016 P2 Q14

At a college, a total of 28 students study one or more of the science subjects: Biology, Chemistry and Physics.

The 28 students form the universal set, \mathcal{E} .

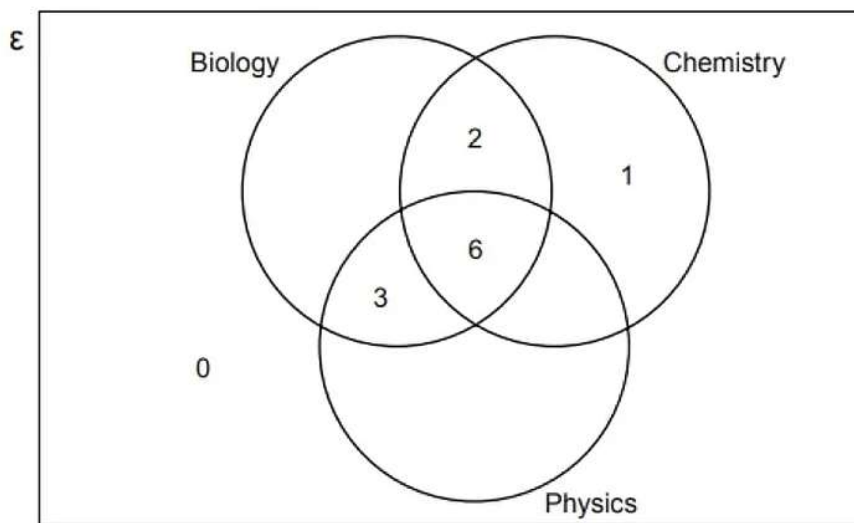
Some parts of the Venn diagram below have already been completed.

It is also known that:

- 5 students study only Biology
- 13 students study Chemistry

(a) Complete the Venn diagram.

[3]



- (b) How many students study Biology and Chemistry but not Physics? [1]
- (c) One of the students is chosen at random.
What is the probability that this student studies Biology? [2]

Intermediate Maths Nov 2017 P1 Q14

A group of pupils from a school took part in The Urdd National Eisteddfod.

All of them competed in at least one of the following competitions: *Singing*, *Dancing* or *Reciting*.

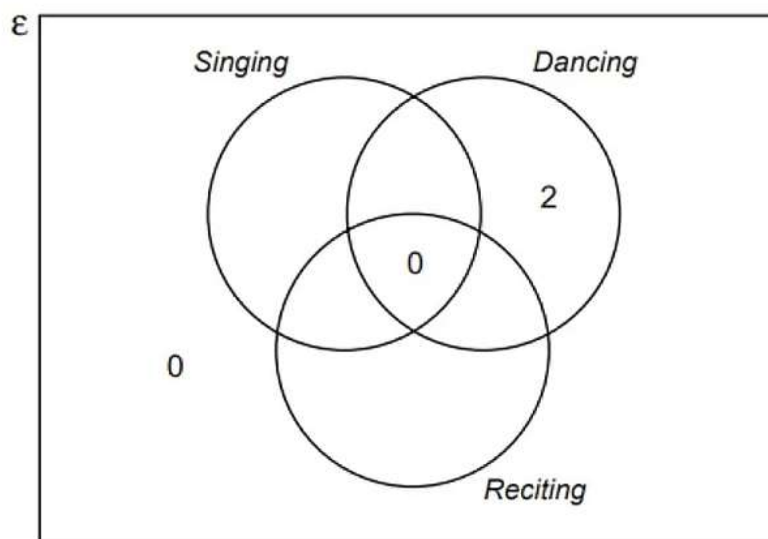
- 2 of them only took part in a *Dancing* competition.
- 5 only took part in a *Reciting* competition.
- No one took part in both a *Reciting* and a *Dancing* competition.
- 3 took part in both a *Singing* and a *Dancing* competition.
- 9 took part in a *Reciting* competition.
- 22 took part in a *Singing* competition.

The Venn diagram below shows some of the above information.
The universal set, \mathcal{E} , contains all of the pupils in the group.

One of the pupils in the group is chosen at random.

What is the probability that this person **only** took part in a *Singing* competition?

[5]



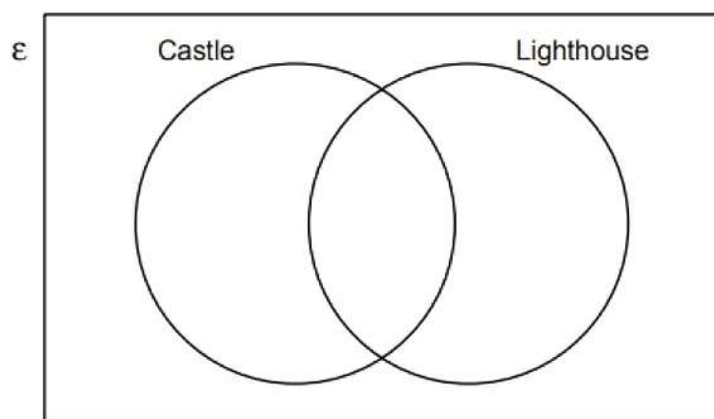
Intermediate Maths June 2017 P1 Q16

A group of 20 people visited Anglesey for a weekend break.

- 10 of the group visited Beaumaris Castle.
- 13 of the group visited South Stack Lighthouse.
- 4 of the group did not visit either of these places.

- (a) Complete the Venn diagram below to show this information.
The universal set, \mathcal{E} , contains all of the 20 people in the group.

[3]



- (b) One person is chosen at random from the group.
What is the probability that this person visited only one of the two places?

[2]