Name	Date started	Target end date

REVISE
.wales

F1.11 — Infographics, schedules, timetables & Venn diagrams

Spec 1.7.1, 1.7.2, 1.7.3 — Unit 1 (calculator allowed)

Reading and interpreting infographics, schedules, timetables and Venn diagrams, including computing totals and times across information from real-world layouts. Sourced from legacy WJEC GCSE Mathematics-Numeracy Foundation papers (3300U10/U20) and accessible content from Intermediate papers (3300U30/U40), organised for revision under the 2025 spec.

2025 SPECIFICATION

Estimated time for entire question pack: ~1 hours 2 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (41 marks across 17 questions).*

*You are advised to **not** attempt to complete all of this in one sitting.*

ABOUT THIS QUESTION PACK

This is a **focused single-topic practice pack**, not a single mock paper. Questions are organised against the 2025 specification. Questions are ordered chronologically by sitting, with custom-written and SAM questions at the end.

INSTRUCTIONS

Use black ink or black ball-point pen. Show all working — method marks are awarded for clear setup.

A calculator is allowed on every question in this pack (Unit 1 is the calculator-allowed paper).

Infographics, schedules, timetables & Venn diagrams — what the new spec asks

WJEC GCSE Mathematics (first teaching 2025) · Unit 1: calculator-allowed.

Reading data 1.7.1

- Read and interpret information from tables, infographics and schedules.
- Extract data accurately for a given query.
- Identify units and time periods on a graphic.

Timetables 1.7.2

- Read 12-hour and 24-hour times from a timetable.
- Calculate journey times and waiting times across a timetable.
- Plan a multi-stage journey using a timetable.

Venn diagrams 1.7.3

- Complete a two-set Venn diagram from word data.
- Read off the count or probability of a region of a Venn diagram.
- Use n(A) + n(B) − n(A and B) to avoid double-counting.

Exam strategy 1.7

- Annotate the graphic before calculating — underline the value you need.
- Check that your totals add to the overall total stated in the question.
- State units (minutes, people) in your final answer.

Crib sheet »

Infographics, schedules, timetables & Venn diagrams in one page

Quick-reference notes — revisit before each question. Don't use during the questions.

Reading infographics

Identify what each label, icon or scale represents before doing any maths.

Check the units and the time period (per day, per year).

Bus & train timetables

Times are usually 24-hour: 14:35 means 2:35 pm.

To find a journey time, count from the departure to the arrival — mind the hour boundary.

Time arithmetic

Don't use a calculator straight on times: 13:50 + 25 min = 14:15, not 14:75.

Split the minutes if it crosses an hour.

Venn 2-set basics

Two circles split into four regions: A only, B only, both (intersection), neither (outside).

Total = A only + B only + both + neither.

Venn 2-set arithmetic

$$n(A \text{ or } B) = n(A) + n(B) - n(A \text{ and } B)$$

Always fill the intersection first, then the 'only' regions.

Common traps

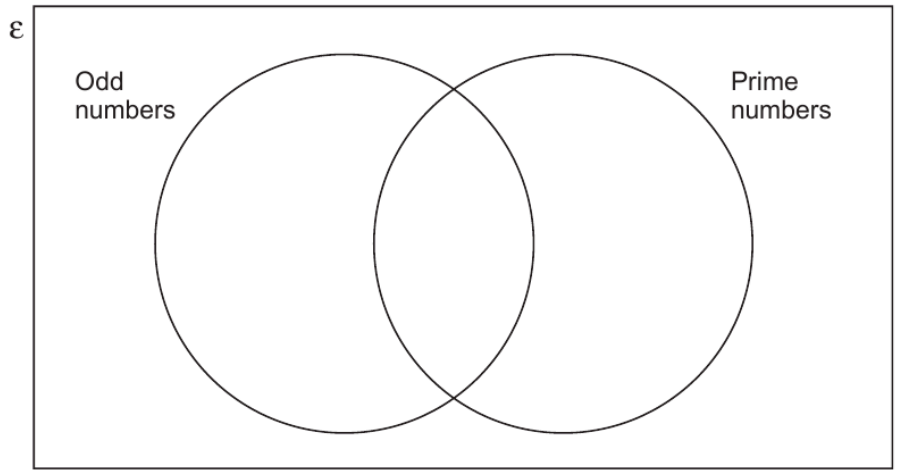
- Double-counting the intersection in a Venn diagram.
- Reading the wrong column on a timetable.
- Forgetting people who are in 'neither' set.

Examiner only

8. Eira believes that 4 minutes 48 seconds is less than half of 9 minutes 18 seconds.
Is Eira correct?
You must show all your working. [2]

9. The Venn diagram below is used for showing
- odd numbers and
- prime numbers.

Place the numbers **1**, **2**, **3**, **4 and 5** in the Venn diagram. [2]

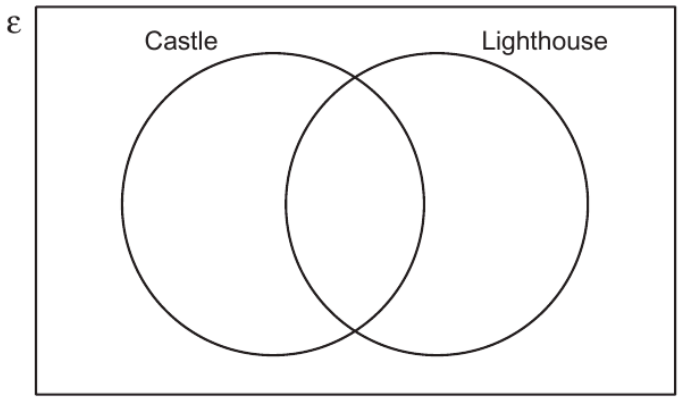


Examiner only

16. 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, ε, contains all of the 20 people in the group. [3]

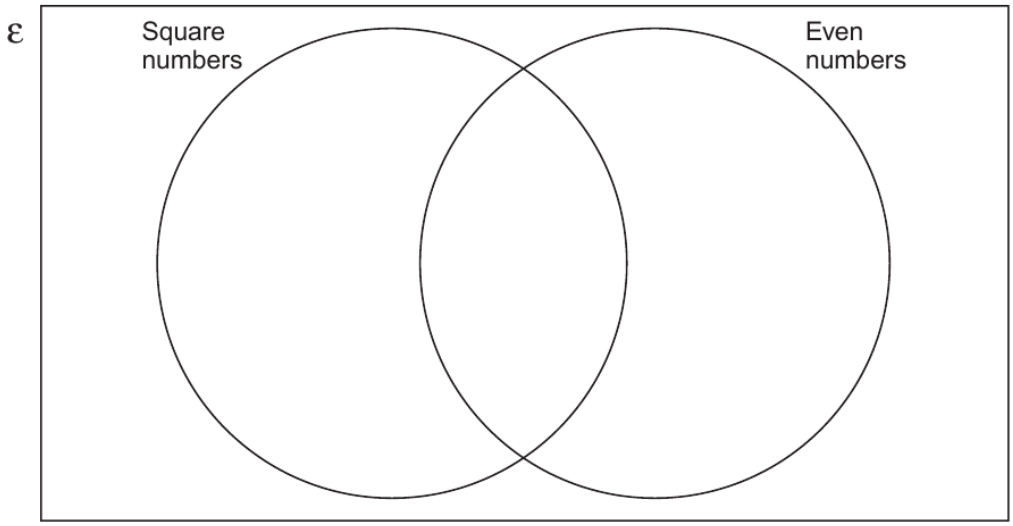


(b) One person is chosen at random from the group.
What is the probability that this person visited only one of the two places? [2]

Examiner only

5. The Venn diagram below is used for showing square numbers and even numbers.

Place the numbers **1**, **2**, **3**, **4** and **5** in the Venn diagram. [2]



6. *(a)* Describe the rule for continuing each of the following sequences.

(i) 27, 32, 37, 42, 47, ... [1]

Rule:

.....

.....

(ii) 6, 12, 24, 48, 96, ... [1]

Rule:

.....

.....

(b) Write the next term in the sequence below. [1]

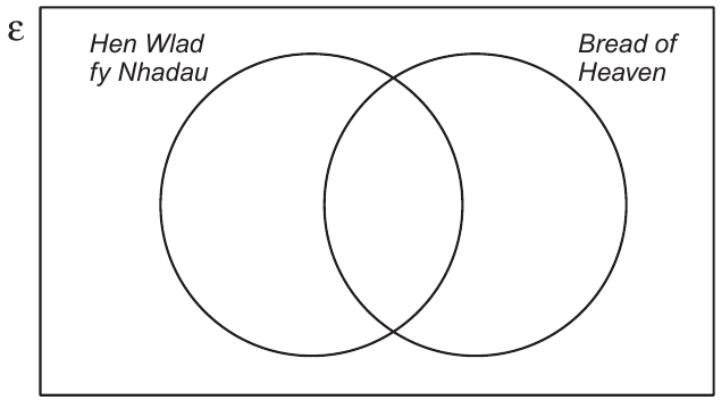
0·2, 0·4, 0·6, 0·8, ...

Examiner only

11. 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]

Examiner only

10. *(a)* A number is decreased by 12% of its value.
This is done 3 times, each time decreasing the previous value by 12%.
Circle the multiplier that you would use to find the value after the 3 decreases. [1]

$\times 0{\cdot}36$ $\times 0{\cdot}88^3$ $\times 0{\cdot}12^3$ $\times 0{\cdot}3^{12}$ $\times 0{\cdot}3^{88}$

(b) Calculate the percentage change when 42·5 is increased to 45·9. [3]

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11. 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.

Examiner only

5. In this question, you must use only the numbers 3 and 7 to make other numbers.
You must only add or subtract.

For example, if we wanted an answer of 11, we could write

$$7 + 7 - 3 = 11.$$

Show how you can get each of the following answers.

(a) 2 [1]

Write your solution in the box below.

= 2

(b) 8 [1]

Write your solution in the box below.

= 8

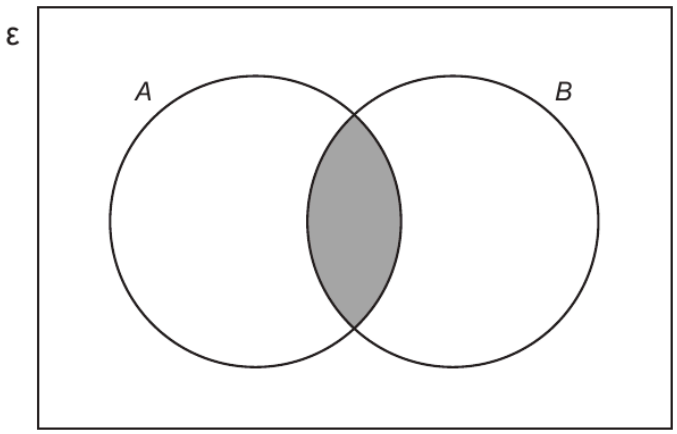
(c) 19 [1]

Write your solution in the box below.

= 19

Examiner only

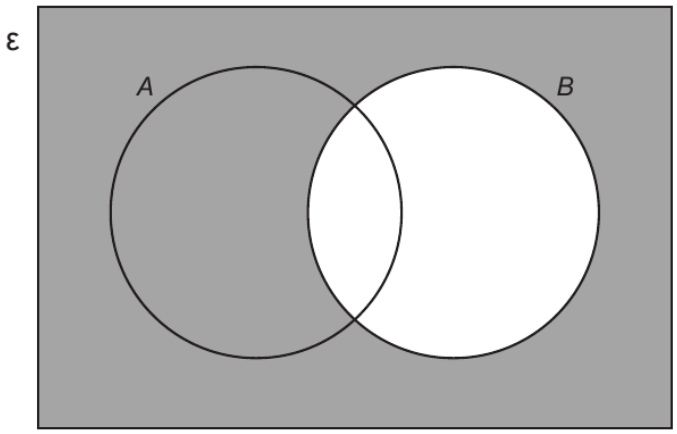
11. *(a)*



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)

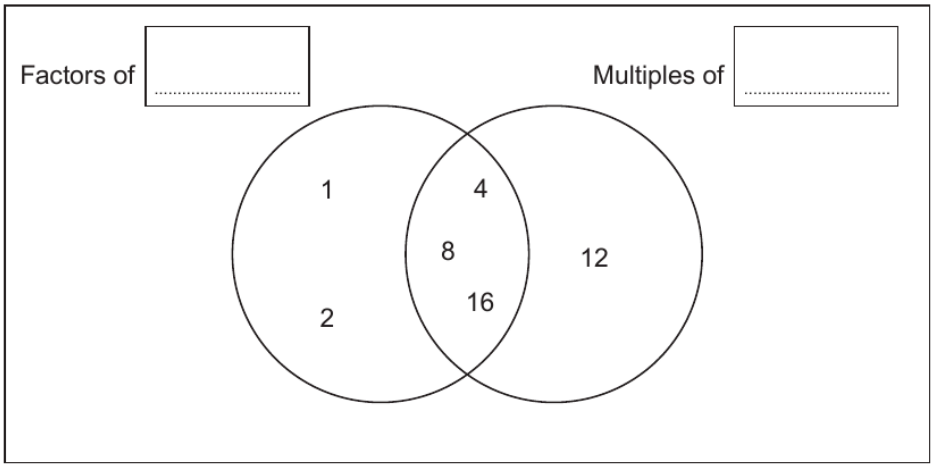


Which of the following sets represents the **shaded** area in the Venn Diagram shown above?
Circle your answer. [1]

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

Examiner only

10. Write a number in each box to describe the sets in this Venn diagram. [2]



Space for working:

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11. Write down three **different whole numbers** so that:

- the median of the three numbers is 13,
- the range of the three numbers is 5. [2]

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The three numbers are ..... , ... and ..... .

Examiner only

11. *(a)* Write an expression for the nth term of the following sequence. [2]

2 7 12 17 .....

.....

.....

nth term = ...

(b) The first four diagrams in a sequence are shown below.

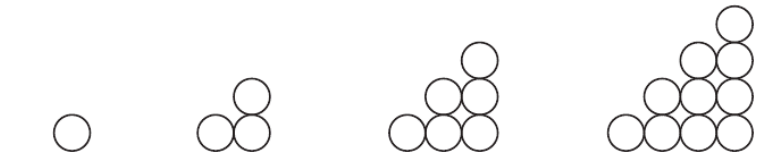

Diagram 1 Diagram 2 Diagram 3 Diagram 4

Complete the following subtraction. [1]

Number of circles in Diagram 17	–	Number of circles in Diagram 16	=	

(c) The first three diagrams in another sequence are shown below.

Diagram 1 Diagram 2 Diagram 3

Give an expression, in terms of n, for the number of dots (●) in Diagram n.
You must simplify your expression. [2]

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Examiner only

2.

Tram timetable from Kemp Station to Rowe Place

Trams leave the station:

- every 12 minutes from 8 a.m. until 10 a.m.
- every 20 minutes from 10 a.m. until late.

It takes 22 minutes from Kemp Station to Rowe Place.

(a) At what time does the first tram after 20:30 leave Kemp Station?
Circle your answer. [1]

20:50 20:40 21:00 20:36 20:42

(b) Nesta looks at the timetable shown above.
She decides to take the latest possible tram from Kemp Station to be at Rowe Place by 10:15 a.m.

At what time will Nesta's tram arrive at Rowe Place?
You must show all your working. [3]

Examiner only

5. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

Gerry plays the piano in a band.
He wants to buy a new digital piano.
The total cost of the piano is £800.

Gerry has already saved $\frac{3}{10}$ of the cost of the piano.

The manager of the band gives him 25% of the cost of the piano.

Gerry decides to save £80 per week.

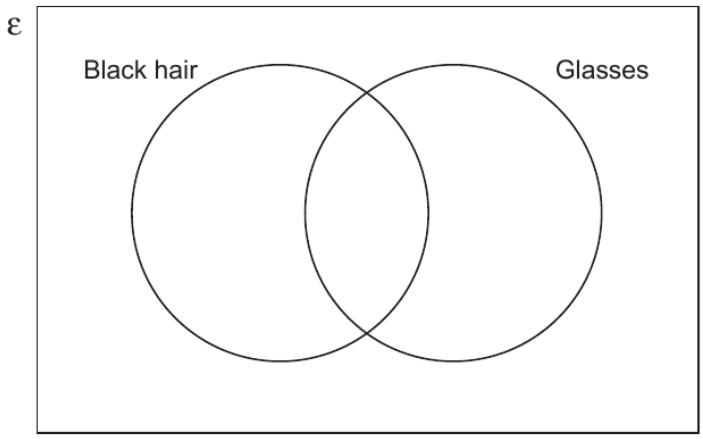
How many weeks will it take Gerry to save enough money to buy the piano?
You must show all your working. [7 + 2 OCW]

Examiner only

14. In a group of 200 people:

- 105 people do not have black hair and do not wear glasses
- 20 people have black hair and wear glasses
- 70 people have black hair.

(a) Complete the Venn diagram below to show this information.
The universal set, ε, contains all 200 people. [3]



(b) One of these people is chosen at random.
What is the probability that this person wears glasses? [2]

Examiner only

8. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

A solid metal cuboid has dimensions 4 cm, 5 cm and 20 cm.

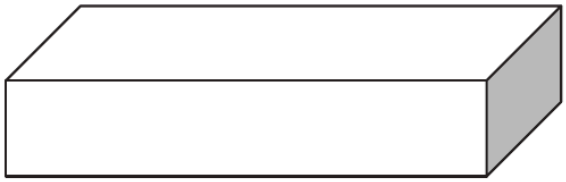


Diagram not drawn to scale

The cuboid is melted down. The metal is used to make solid cubes, each with sides 3 cm.

How many complete cubes will be made?
You must show all your working. [5 + 2 OCW]

Examiner only

17. A solid metal cuboid has dimensions 4 cm, 5 cm and 20 cm.

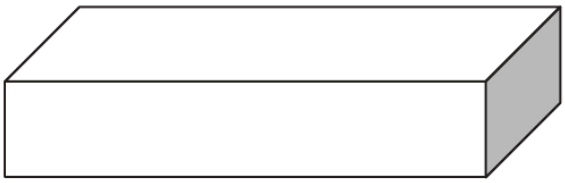


Diagram not drawn to scale

The cuboid is melted down. The metal is used to make solid cubes, each with sides 3 cm.

How many complete cubes will be made?
You must show all your working. [5]

Examiner only

7. (a) Simplify $5k - 8k + 6k$. [1]

(b) Solve these equations.

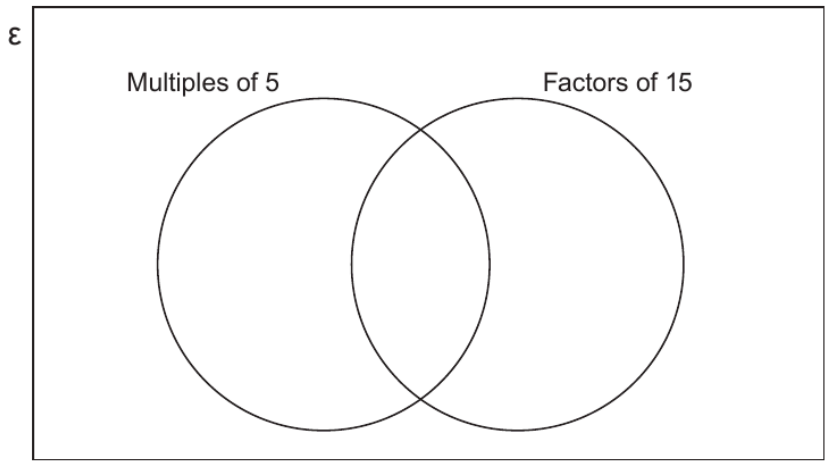
(i) $15 + x = 60$ [1]

(ii) $20 - y = 9$ [1]

(iii) $6w = 54$ [1]

8. The Venn diagram below is used to show
- multiples of 5
- factors of 15.

Place the numbers **1**, **3**, **5**, **10** and **15** in the Venn diagram. [2]



Examiner only

11. (a) Evaluate $\sqrt{0{\cdot}9^3 - 0{\cdot}9^4}$. [2]

(b) What is the greatest integer value of n if $2n < 17$? [1]

Greatest integer value of n = ...

(c) What is the least integer value of n if $2^n > 125$? [1]

Least integer value of n = ...

Examiner only

9. Display the following information in the Venn diagram below. [4]

- Universal Set ε = {Integers between 1 and 7 inclusive}
- Set A = {even numbers}
- Set B = {factors of 6}
- Set C = {prime numbers}