Name	Date started	Target end date

WJEC GCSE Mathematics and Numeracy (Double Award) — Question Pack

Working with time across the 12-hour and 24-hour clock, calculating elapsed time across hours or days, and reading calendars, timetables and dates. So

REVISE
.wales

F1.13 — Time, dates & 24-hour clock

Spec 3.5.1, 3.5.3, 3.5.4, 3.5.5 — Unit 1 (calculator allowed)

Working with time across the 12-hour and 24-hour clock, calculating elapsed time across hours or days, and reading calendars, timetables and dates. 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: ~56 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (37 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).

Time, dates & 24-hour clock — what the new spec asks

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

Reading time 3.5.1

- Read clock times in 12-hour and 24-hour formats.
- Convert between 12-hour (am/pm) and 24-hour clock.
- Read timetables and identify departure or arrival times.

Elapsed time 3.5.3

- Calculate the duration between two times within a day.
- Calculate durations that cross midnight or span several days.
- Add or subtract a duration from a given time.

Dates & calendars 3.5.4

- Count days between dates within and across months.
- Use number of days in each month, including leap years.
- Work with weeks and months in scheduling problems.

Exam strategy 3.5

- Convert times into 24-hour clock before subtracting.
- Sense-check answers: an evening journey shouldn't take 22 hours.
- Show working: minutes-to-next-hour, then whole hours, then leftover.

Crib sheet »

Time, dates & 24-hour clock in one page

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

12-hour to 24-hour

am times stay the same: 9:30 am → 09:30.

pm times: add 12 to the hour: 2:45 pm → 14:45.

Midnight = 00:00 · Noon = 12:00.

24-hour to 12-hour

Before 12:00 it's am: 07:15 → 7:15 am.

After 12:00 subtract 12 for pm: 18:40 → 6:40 pm.

Elapsed time

$$\text{end time} - \text{start time}$$

Count up to the next whole hour first, then add full hours, then the leftover minutes.

09:45 to 11:20 → 15 min + 1 h + 20 min = 1 h 35 min.

Mins to hours decimal

30 min = 0.5 h · 15 min = 0.25 h · 45 min = 0.75 h.

General: minutes ÷ 60.

Use for compound measures like speed.

Calendar facts

7 days in a week · 12 months in a year · 365 days (366 in a leap year).

30 days: Apr, Jun, Sep, Nov · 31 days: rest · Feb 28 or 29.

Common traps

- Treating an hour as 100 minutes (it's 60).
- Forgetting to add 12 for pm in 24-hour clock.
- Mis-counting days that cross a month boundary.

Examiner only

17. Calculate the mean of these four time periods.
You must give your answer in hours and minutes. [4]

5 hours 20 minutes 2 hours 44 minutes 6 hours 18 minutes 4 hours 34 minutes

Mean time = ... hours ..... minutes

Examiner only

15. A task takes 6 hours 15 minutes to complete.

$\frac{2}{5}$ of this time is spent on planning.

How long was spent on the **rest of the task**?
Give your answer in hours and minutes.

You must show all your working. [5]

Examiner only

1. *(a)* What is the time 8 hours and 40 minutes after 11:38? [1]

Time is .....

(b) What is the time difference between 7:35 a.m. and 2:15 p.m. on the same day? Give your answer in hours and minutes. [1]

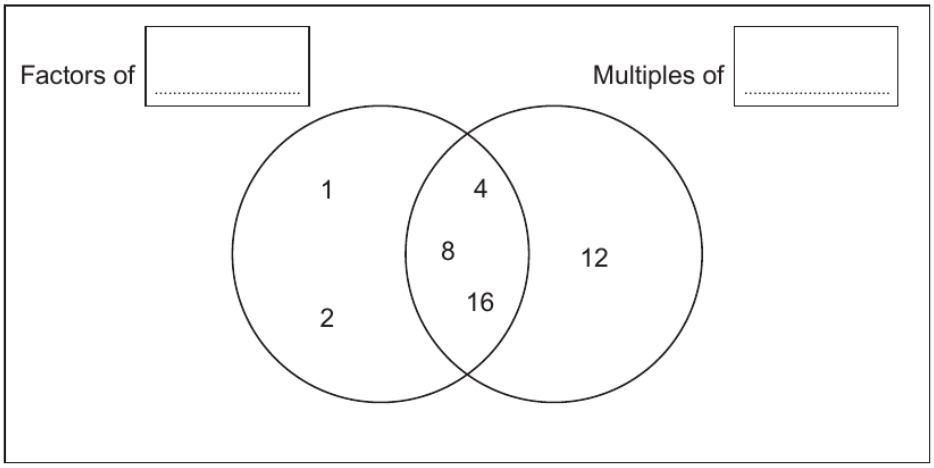
Time difference is ..... hours and ..... minutes.

(c) Evaluate the time difference between 7 minutes 15 seconds and 2 minutes 50 seconds. Give your answer in seconds. [2]

Time difference is ..... seconds.

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

5. *(a)* A camera was switched on at

21:45 on 20th March, 2021.

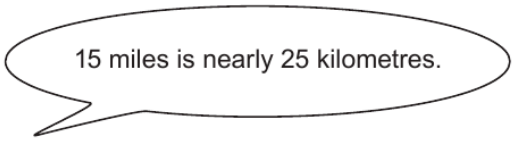
It was left continuously filming until the battery ran out.

The battery lasted for exactly 2 days and 10 hours.

At what time and on which date did the battery run out? [2]

Battery ran out at ..... : ..... on ..... March 2021.

(b) Helen says,



Is she correct?
You must show all your working. [2]

Examiner only

13. Thirty numbers are recorded in the grouped frequency table below.

Group	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
Frequency	3	8	7	6	6

It is decided that the same thirty numbers should be recorded in a table with larger group widths.

This new table is shown below, but only one frequency has been given.

Group	1 to 30	31 to 60	61 to 90
Frequency			12

(a) What is the smallest possible frequency of the 1 to 30 group? [1]

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(b) What is the greatest possible frequency of the 31 to 60 group? [1]

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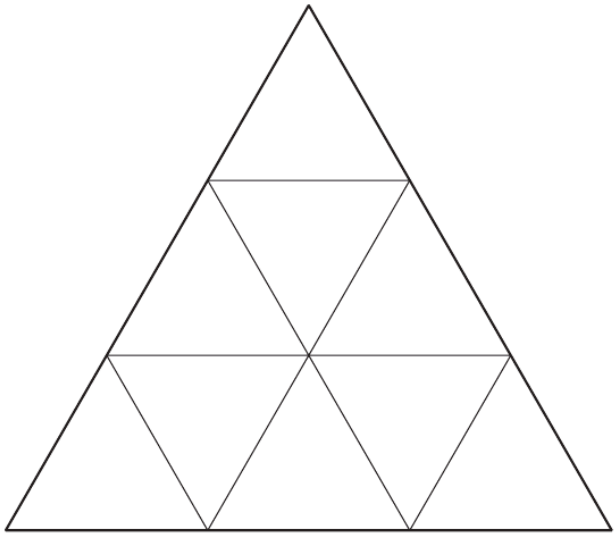
Examiner only

5. (a) How much time has passed between 8:30 a.m. and 2:15 p.m. on the same day? [1]

(b) Shade $\frac{2}{3}$ of the shape below. [1]



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

4. Lena flew from Havana Airport in Cuba to Gatwick Airport in the UK. She then drove home from Gatwick Airport.

(a) When it is 09:40 in Havana, it is 14:40 on the same day in Gatwick.

It took 9 hours 15 minutes to fly from Havana to Gatwick.
Lena's flight left Havana on Monday at 17:40 local Havana time.

On what day and at what time did this flight arrive in Gatwick?
Give your answer in UK time. [4]

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Day ..... Time .....

(b) Lena lives 80 miles from Gatwick Airport.
The first 20 miles of Lena's journey home from the airport took 1 hour.
The average speed for the remaining 60 miles of her journey was 40 mph.

(i) Calculate the time taken for the remaining part of her journey. [2]

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(ii) Calculate the average speed, in mph, of Lena's 80-mile journey home from the airport. [3]

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Average speed ..... mph

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.

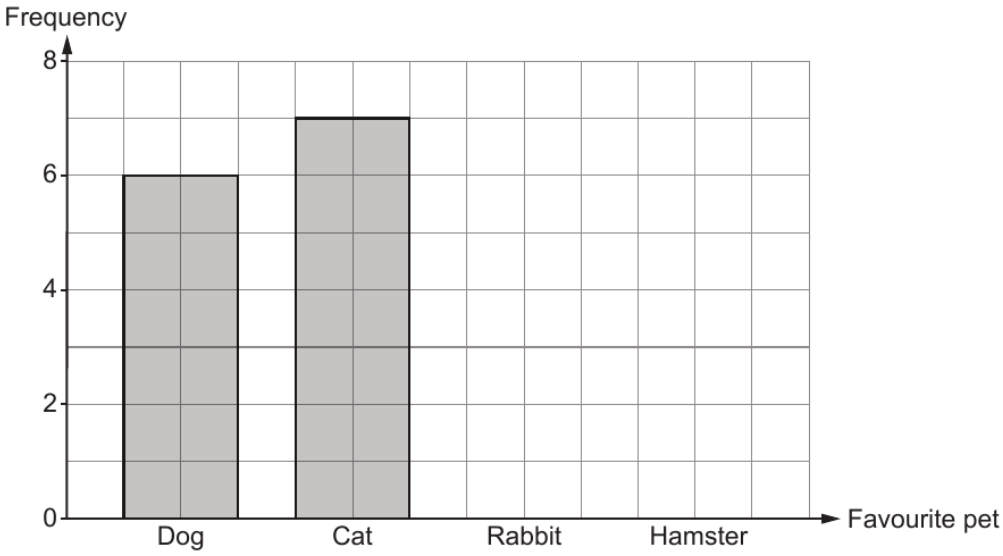
How many weeks will it take Gerry to save enough money to buy the piano?
You must show all your working. [7 + 2 OCW]

Examiner only

6. The 22 pupils in a class were asked, "What is your favourite pet?"
The pets chosen by the pupils were dog, cat, rabbit and hamster.
Some of the results are shown in the bar chart below.

9 pupils in the class chose either rabbit or hamster.
The **modal** pet is rabbit.

(a) Complete the bar chart by drawing the two missing bars. [2]



(b) One of these pupils is chosen at random.
What is the probability that this pupil's favourite pet is a cat? [2]

Examiner only

18. The diagram below shows a semicircle, with radius r, drawn inside a trapezium.

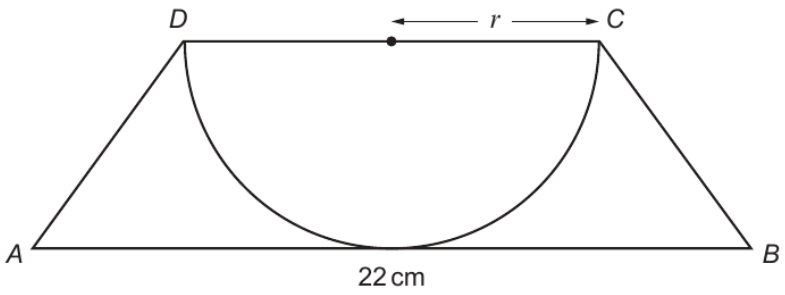


Diagram not drawn to scale

The area of the semicircle is $77\,cm^2$.

The semicircle touches the line AB.
$AB = 22\,cm$.

Calculate the area of the trapezium $ABCD$. [5]

END OF PAPER

Examiner only

2. Jamil works in Cardiff from Monday to Friday.

(a) He travels by train from Bridgend to Cardiff and back each day.

The table below shows the times of the trains from Bridgend to Cardiff.

Departs at **07:43** **Bridgend** [BGN]	Arrives **08:08** **Cardiff Central** [CDF]
Departs at **07:53** **Bridgend** [BGN]	Arrives **08:13** **Cardiff Central** [CDF]
Departs at **08:22** **Bridgend** [BGN]	Arrives **08:47** **Cardiff Central** [CDF]
Departs at **08:26** **Bridgend** [BGN]	Arrives **08:54** **Cardiff Central** [CDF]

(i) On a Tuesday, Jamil must be at work by 9 a.m. for a meeting.
His office is a 10-minute walk from the station.

What is the latest train that Jamil could catch from Bridgend to be on time for the meeting? [2]

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(ii) Using the information in the table above, complete the following sentence. [3]

The train that departs from Bridgend at ..... takes the **longest** time to travel to Cardiff.

This train takes ..... minutes to travel from Bridgend to Cardiff.

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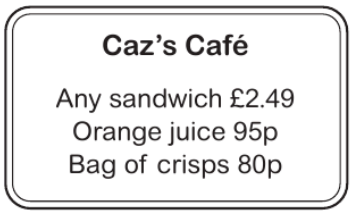
Examiner only

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

Jamil buys his lunch on his way to work every day from Monday to Friday.
Each day, he buys a sandwich, an orange juice and a bag of crisps.



Last week, Jamil bought his lunch from Caz's Café every day from Monday to Friday.
This week, he plans to buy his lunch from Simon's Sandwiches every day from Monday to Friday.

In total, **how much less** will Jamil pay for his lunches this week than he paid last week?
You must show all your working. [4 + 2 OCW]

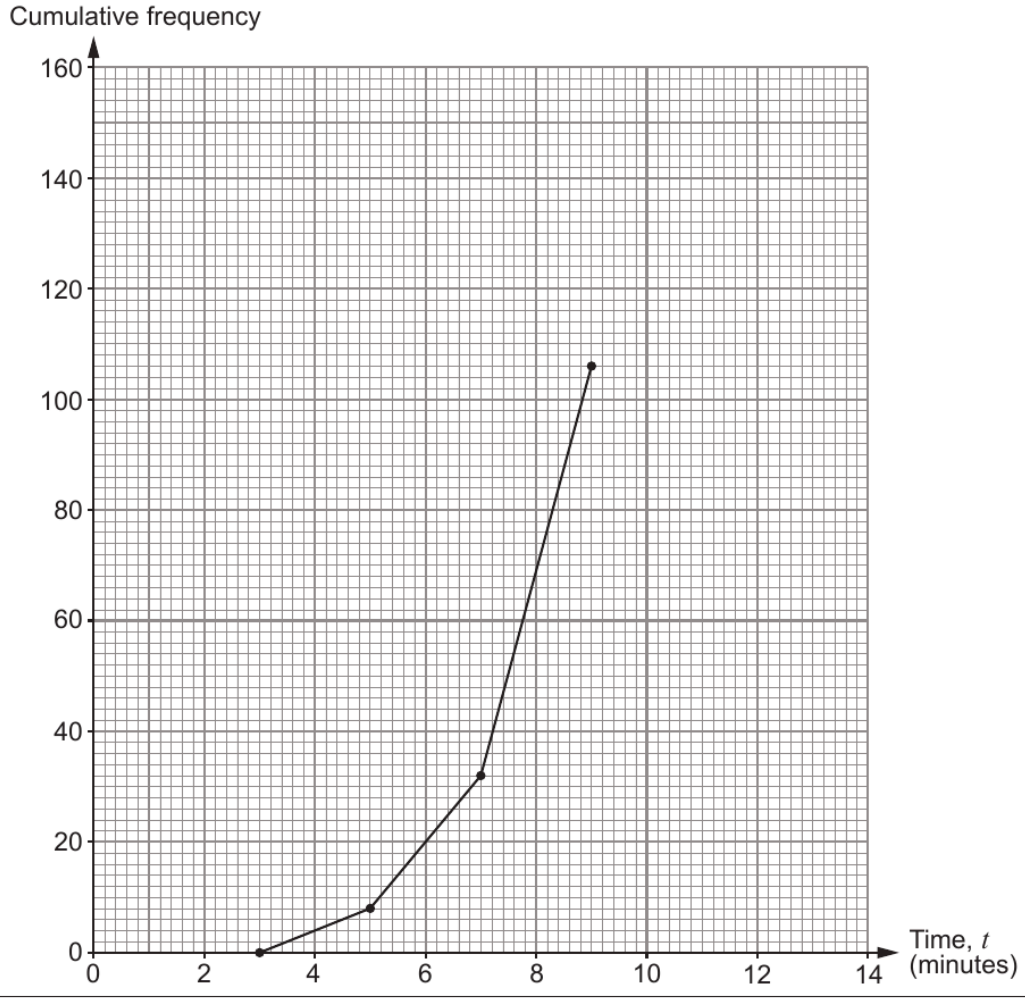
Examiner only

9. Giovanni has a takeaway pizza van. He sells whole pizzas and slices of pizza from his van.

(a) For the last 3 days, he has timed how long it takes to complete the food order for each of his customers.
Giovanni recorded his results in the table below.

(i) Complete the cumulative frequency table **and** the cumulative frequency diagram. [2]

Time, t (minutes)	Frequency	Cumulative frequency
$3 < t \leqslant 5$	8	8
$5 < t \leqslant 7$	24	32
$7 < t \leqslant 9$	74	106
$9 < t \leqslant 11$	40	.....
$11 < t \leqslant 13$	14	.....



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Use your cumulative frequency diagram to give the best estimates for the answers to each of the following questions.

(ii) Find the median time taken to complete a food order. [1]

The median time is ..... minutes.

(iii) Giovanni is concerned that food orders are taking too long to complete.
He says,

"Only 25% of the food orders are completed in under ..... minutes."

Use **one** of the five values below to complete Giovanni's statement. [1]

6·4 6·6 7·2 8 9·6

(iv) Calculate the percentage of orders that were completed in less than 6 minutes. [2]

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(b) For the last 3 days:
- Giovanni spent £180 on ingredients
- he spent £220 on the running costs for the pizza van
- he received a total of £700 from the food orders.

Calculate Giovanni's percentage profit. [3]

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(c) Next year Giovanni intends to charge £8.40 for a basic pizza.
This is an increase of 20% from the current charge.

Calculate how much Giovanni currently charges for a basic pizza. [2]

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Examiner only

16. What is $\frac{1}{3}$ of the time difference between 18:30 today and 10:30 tomorrow?

Give your answer in **hours and minutes**.
You must show all your working. [3]

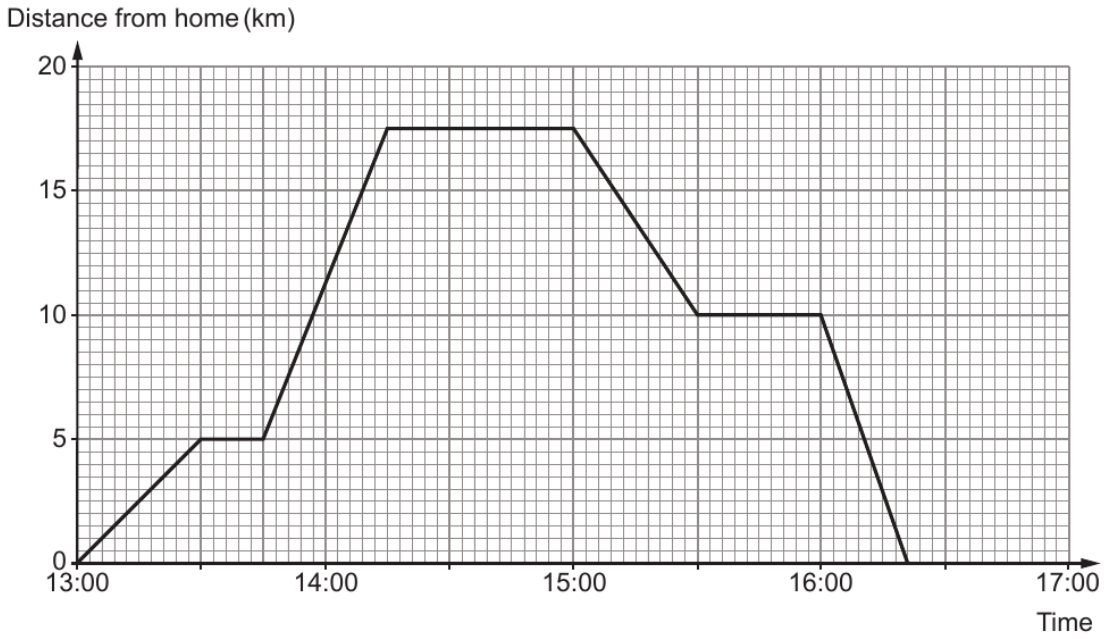
Answer is ..... hours ..... minutes.

17. Calculate the area of a circle with a radius of 8·7 cm.
Give your answer in cm^2, correct to the nearest whole number. [3]

Area = ... cm^2

Examiner only

5. Yesterday, Jemila cycled along a straight track from home to the beach and back.



(a) For how many minutes was Jemila 17·5 km from home? [1]

..... minutes

(b) At what time did Jemila first start cycling in the direction of home?
Circle your answer. [1]

13:30 14:15 15:00 15:30 16:00

(c) By 15:30, how many kilometres in total had Jemila cycled? [1]

..... km

(d) Jemila was due to get home at 16:30.
She arrived home early.
How many minutes early was she? [1]

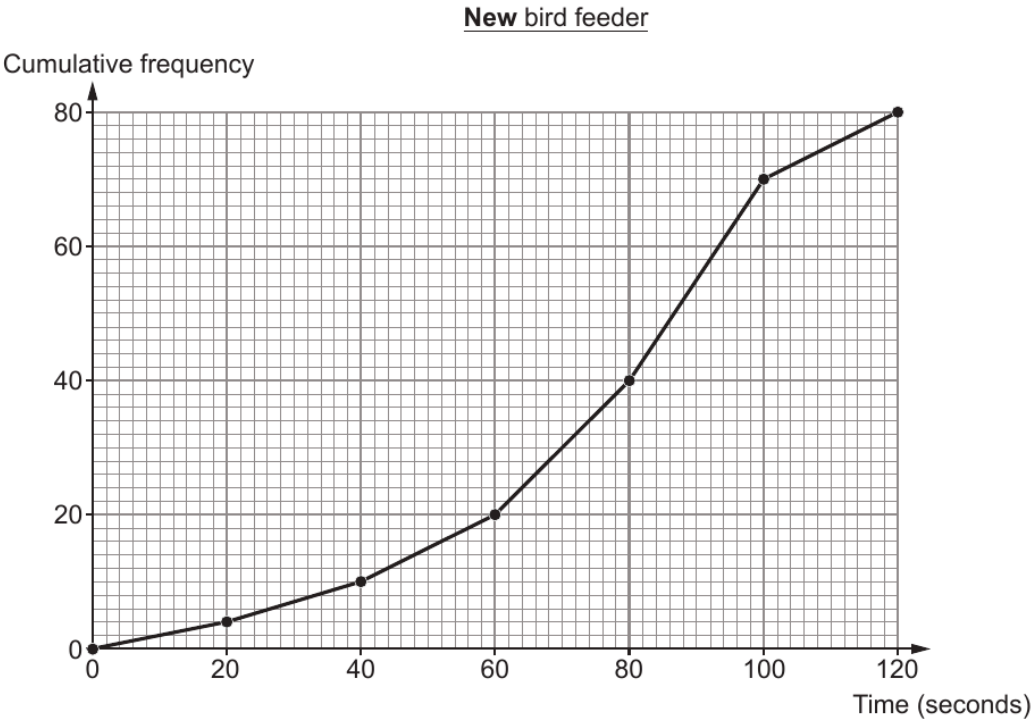
..... minutes

10. Aderyn is a company that makes bird feeders.

Squirrels often try to steal food from bird feeders.

To make this more difficult, Aderyn has designed a **new** bird feeder. Aderyn tests its new feeder to check how long it takes squirrels to reach the food inside.

The results are displayed in the cumulative frequency diagram below.



(a) Aderyn has the following information about the time it took squirrels to reach the food in its **original** bird feeder.

Original bird feeder	
Modal group	60 to 80 seconds
Median time	75 seconds
Interquartile range	20 seconds

Examiner only

Aderyn compared the times squirrels take to reach the food in the original bird feeder and the times they take to reach food in the new bird feeder.

(i) Complete this sentence:

'The modal group for the new bird feeder is between ..... and ..... seconds.'

Does the modal group for the new bird feeder imply that there is an improvement in the times? [1]

Yes ☐ No ☐

(ii) Use the cumulative frequency diagram and the table to give the best estimate to complete each of the following sentences.

I. 'The difference between the median times is ..... seconds.' [1]

.....

II. 'The difference between the interquartile ranges of the times is ..... seconds.' [2]

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(b) Use the cumulative frequency diagram to give the best estimate to complete the following sentence. [3]

'20% of the squirrels took ..... seconds or more to reach the food in the new bird feeder.'

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Examiner only

(c) The population density of grey squirrels in forests depends on the variety of tree that grows there.

Variety of tree	Typical population density of grey squirrels **per km^2**
Oak	1200
Chestnut	100
Pine	45

Rhian says,

I know that Maesgwyn forest has only one variety of tree: oak, chestnut or pine.

Maesgwyn forest covers an area of 21 500 m^2.
There are 24 grey squirrels living in Maesgwyn forest.

From this information, which variety of tree is most likely to be found in Maesgwyn forest?

You must show working to support your answer. [3]

Oak ☐ Chestnut ☐ Pine ☐

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