Name	Date started	Target end date

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

Foundation scatter diagrams: plotting paired data, describing correlation in words, drawing a line of best fit by eye, and using it to predict values.

REVISE
.wales

F3.10 — Scatter diagrams, correlation & line of best fit

Spec 4.2.4, 4.2.5, 4.2.6, 4.2.7 — Unit 3 (calculator allowed)

Foundation scatter diagrams: plotting paired data, describing correlation in words, drawing a line of best fit by eye, and using it to predict values. 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: ~15 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (10 marks across 3 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 3 is the calculator-allowed paper).

Scatter diagrams, correlation & line of best fit — what the new spec asks

WJEC GCSE Mathematics (first teaching 2025) · Unit 3: calculator-allowed.

Scatter diagrams 4.3.1

- Plot paired data accurately.
- Choose sensible scales for both axes.
- Label axes with units.

Correlation 4.3.2

- Identify positive, negative or no correlation.
- Describe strength as strong or weak.
- Use context to explain the relationship.

Line of best fit 4.3.3

- Draw by eye through the cluster.
- Use it to estimate one variable from the other.
- Comment on reliability of predictions.

Exam strategy 4.3

- Read off carefully — rule a line to the axis.
- State whether you're interpolating or extrapolating.
- Use words like 'positive correlation', not vague phrases.

Crib sheet »

Scatter diagrams, correlation & line of best fit in one page

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

Plotting pairs

Each point = one pair of values (x, y).

Pick clear scales. Label both axes with units.

Correlation

Positive: as x rises, y rises.

Negative: as x rises, y falls.

None: no clear pattern.

Strength

Strong — points cluster tightly along a line.

Weak — points scattered loosely around a trend.

Line of best fit

Drawn by eye, straight through the 'middle' of the points.

Roughly equal points above and below. Passes through (or near) the mean of x and y.

Predicting from the line

To predict y from x: go up to the line, then across to read y.

Only reliable *within* the data range (interpolation).

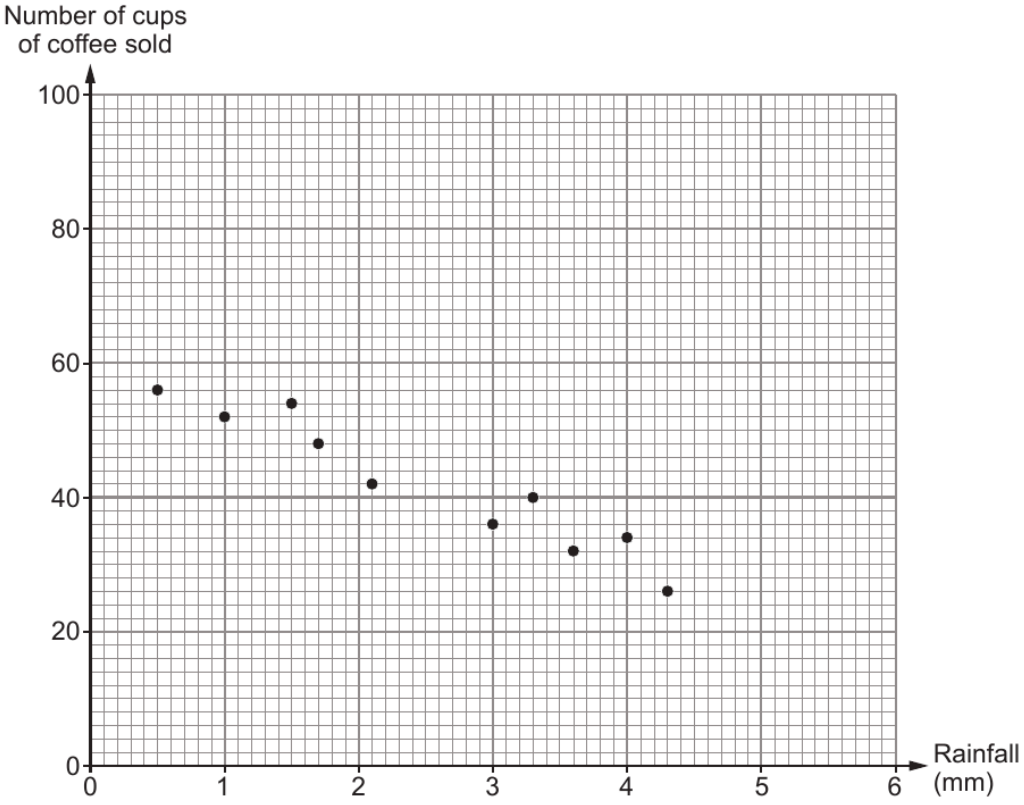
Extrapolation warning

Predicting *outside* the data range is risky — trend may not continue.

Examiner only

8. Anwen has an outdoor mobile coffee stall.

(a) It rained on each of the last 10 days.
Each day, Anwen recorded the amount of rainfall and the number of cups of coffee she sold.
The scatter diagram below shows her results.



For the last 10 days:
- the mean number of cups of coffee sold per day was 42
- the **total** rainfall was 25 mm.

(i) Give the coordinates of the point through which a line of best fit should be drawn.
Hence, draw a line of best fit on the scatter diagram. [2]

.....

.....

Coordinates of the point are (..... , ...)

Examiner only

(ii) Estimate the number of cups of coffee that Anwen expects to sell on a day when the rainfall is 2·0 mm.
Use your line of best fit to find your estimate. [1]

Number of cups of coffee is .....

(b) Anwen buys her coffee beans in tins.
Each tin has a height of 18 cm, correct to the nearest 1 cm.

Calculate the maximum height of a stack of 5 of these tins. [2]

(c) The height of the storage space under Anwen's serving counter is 97·5 cm, correct to the nearest 0·5 cm.

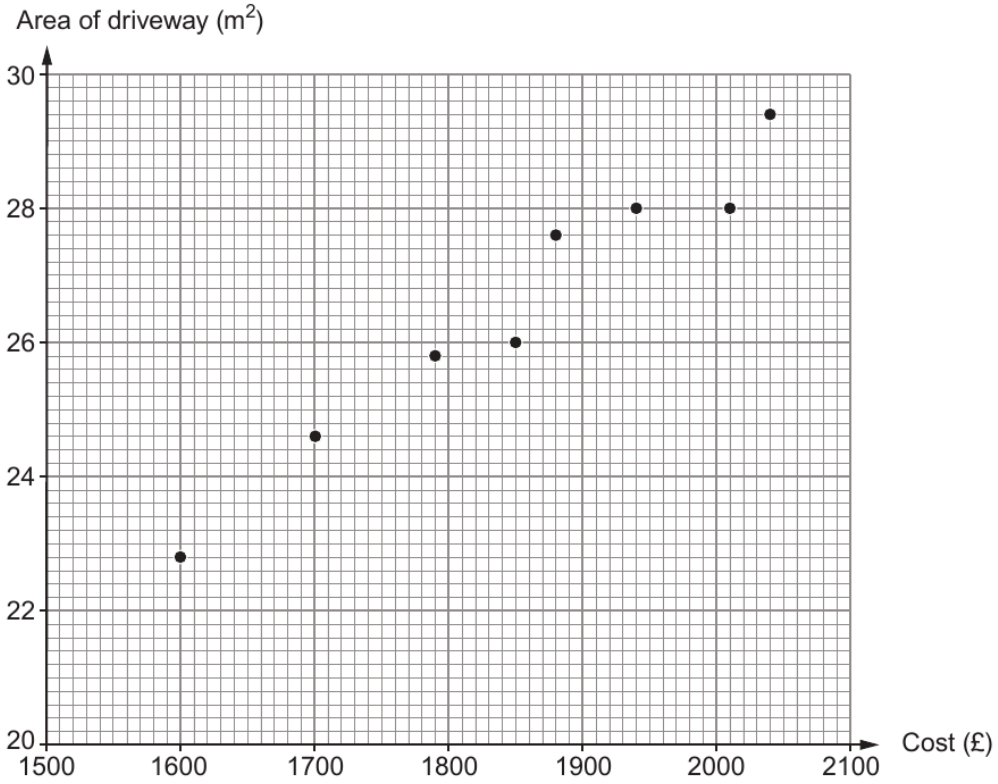
Anwen is going to buy a recycling bin of height exactly 97·3 cm.
Can Anwen be certain that she can fit this bin under her serving counter?

Yes ☐ No ☐ Can't decide ☐

You must show working to support your answer. [1]

Examiner only

6. Some houses in a village have new driveways laid by DriveDown.
The scatter diagram shows the area and cost of each driveway.



(a) (i) Two of these houses have the same area of driveway.
Calculate the difference in the cost of the new driveway for these two houses. [2]

.....

.....

.....

(ii) Another house in the village has a driveway of area 25 m^2.
Estimate the cost of having a new driveway laid by DriveDown for this house. [1]

.....

Examiner only

(b) The measurements of Gwenda's driveway are shown below.

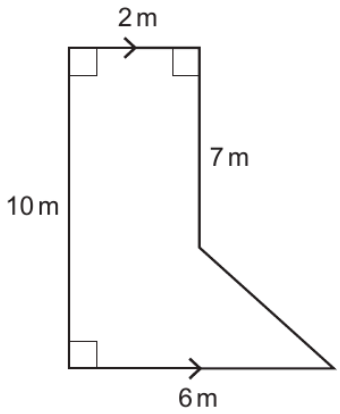


Diagram not drawn to scale

Consider the exact area of Gwenda's driveway.
Calculate an estimate of how much it would cost Gwenda to have a new driveway laid by DriveDown.
You must show all your working. [4]

.....

.....

.....

.....

.....

.....

Examiner only

(c) Tanya's driveway covers an area of $23\,m^2$.
She decides to have her driveway repaired instead of having a new driveway.

Tanya thinks the repair will cost her 40% of the estimated cost of having a new driveway laid by DriveDown.
She has budgeted £575 for the repair of her driveway.
Will Tanya's budget cover the cost of repairing her driveway?

Yes ☐ No ☐

You must show all your working and give a reason for your answer. [2]

.....

.....

.....

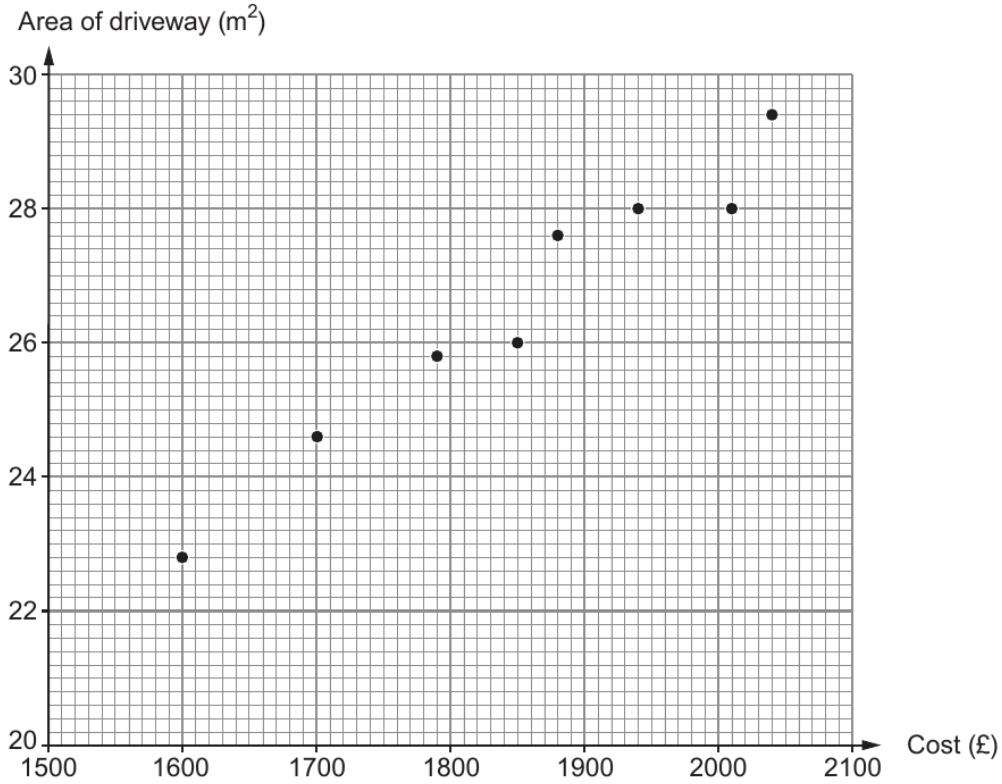
.....

.....

.....

Examiner only

8. Some houses in a village have new driveways laid by DriveDown.
The scatter diagram shows the area and cost of each driveway.



(a) Two of these houses have the same area of driveway.
Calculate the difference in the cost of the new driveway for these two houses. [2]

.....

.....

.....

(b) Another house in the village has a driveway of area 25 m².
Estimate the cost of having a new driveway laid by DriveDown for this house. [1]

.....