Name	Date started	Target end date

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

Foundation expanding and factorising with single brackets: applying the distributive law a(b + c) = ab + ac to multiply out a bracket, and reversing t

REVISE

.wales

F2.08 — Expanding single brackets & factorising

Spec 2.1.7, 2.1.13 — Unit 2 (no calculator)

Foundation expanding and factorising with single brackets: applying the distributive law a(b + c) = ab + ac to multiply out a bracket, and reversing the process by spotting the highest common factor and pulling it outside. 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: ~38 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (25 marks across 14 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 **not** permitted on any question in this pack (Unit 2 is the non-calculator paper).*

Expanding single brackets & factorising — what the new spec asks

WJEC GCSE Mathematics (first teaching 2025) · Unit 2: non-calculator.

Distributive law 2.1.7

- Expand a(b + c) for numerical and algebraic a.
- Handle negative multipliers outside the bracket.
- Simplify after expanding by collecting like terms.

Factorising linear expressions 2.1.13

- Find the highest common factor of two or more terms.
- Take the HCF outside a single bracket.
- Factorise expressions where the HCF includes a variable.

Verifying answers 2.1.7

- Re-expand factorised expressions to check.
- Compare each term against the original.
- Spot incomplete factorisation (HCF not maximal).

Exam strategy 2.1

- Non-calculator — write the expansion line clearly.
- Underline the HCF before writing the bracket.
- Final expression should have no remaining common factor.

Crib sheet »

Expanding single brackets & factorising in one page

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

Expanding a single bracket

$$a(b + c) = ab + ac$$

Multiply the term outside by *each* term inside.

3(x + 4) = 3x + 12.

With negatives outside

Keep the sign with the multiplier.

−2(x − 5) = −2x + 10.

Multiplying two negatives gives a positive.

Factorising

Reverse of expanding. Find the **HCF** of all terms and write it outside.

6x + 9 = 3(2x + 3).

Including the variable in the HCF

$$x^2 + 5x = x(x + 5)$$

If every term contains x, take x out as well as the number.

Check by expanding back

Always multiply your factorised answer out again. It should match the original expression exactly.

Common traps

- Only multiplying the first term inside the bracket.
- Forgetting the sign when the outside term is negative.
- Taking out an HCF that isn’t the *highest*.

Examiner only

(c) If a large number of people played the game, approximately what fraction of them would you expect to choose a white ball?
Circle your answer. [1]

$\frac{1}{10}$ $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$

18. (a) Factorise $x^3 - 5x$. [1]

(b) Expand and simplify $(2x - 3)(x + 4)$. [2]

(c) Factorise $x^2 - 3x - 28$. [2]

Examiner only

12. *(a)* Expand and simplify the following expression. [4]

$$x(5x - 2) - 3(x^2 - 2x + 7)$$

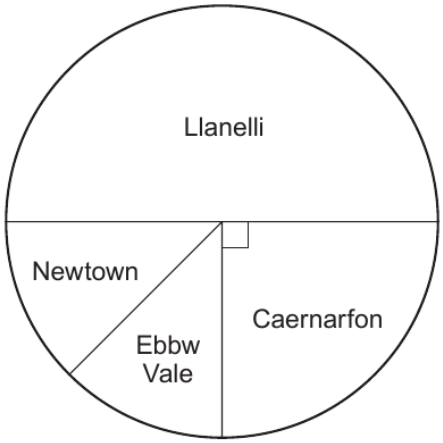
(b) Solve $\frac{22 - f}{3} = 6$. [3]

13. *(a)* A fair, six-sided dice is thrown twice.
What is the probability that a 3 is thrown on both occasions? [2]

Examiner only

(b) A company has offices in Llanelli, Caernarfon, Newtown and Ebbw Vale.
Its national committee is made up of workers from these four offices.

The pie chart below shows what fraction of the committee members come from each office.



There is an equal number of members from Newtown and Ebbw Vale.

A member is chosen at random from this committee to be its chairperson.

(i) The probability that the chosen member works at the Llanelli office is shown in the table below.

Complete the table. [2]

Office	Llanelli	Caernarfon	Newtown	Ebbw Vale
Probability	$\frac{1}{2}$			

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(ii) What is the probability that the member chosen as chairperson works at either the Llanelli or the Ebbw Vale office?
You must show all your working. [2]

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Examiner only

8.

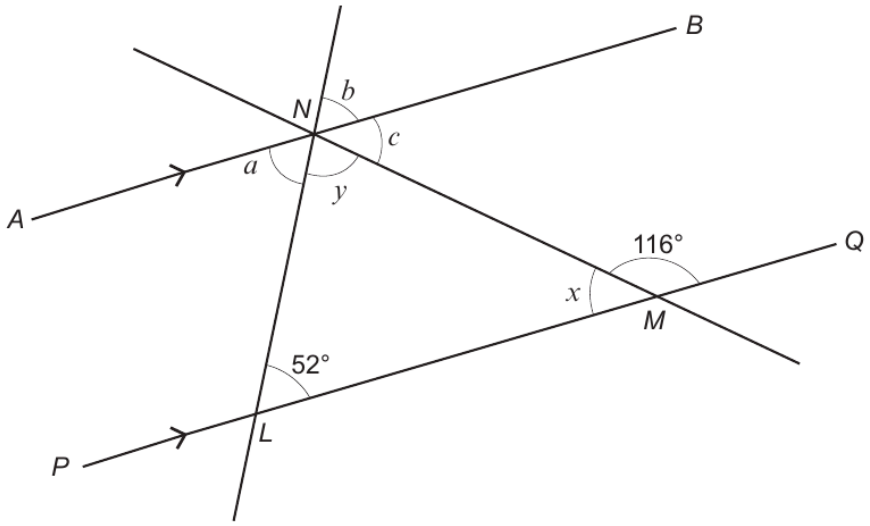

Diagram not drawn to scale

Line *AB* is parallel to line *PQ*.

(a) Find the size of each of the angles a, b and c. [3]

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a = ... ° b = ... ° c = ... °

Examiner only

(b) Find the size of each of the angles x and y.
Hence give the special name for triangle *LMN*. [3]

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x = ... ° y = ... °

The special name for triangle *LMN* is .....

Examiner only

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

18% of £256 is shared in the ratio 2 : 1.
Calculate the value of the larger share.
Give your answer to the nearest 10p.

You must show all your working. [5 + 2 OCW]

6. *(a)* Factorise $7ab + 11a$. [1]

(b) Factorise $x^2 - 8x$. [1]

(c) Expand $4y(2 - 3y)$. [2]

Examiner only

1. Complete each row of the following table.
The first row has been completed for you. [3]

Place	Temperature at 10 a.m.	Change	Temperature at 6 p.m.
Cwmbran	2°C	Down 4°C	−2°C
Llanelli	−3°C	Down 1°C	
Llanidloes	−4°C		−1°C
Porthmadog		Up 4°C	3°C

2. Write 7%, $\frac{3}{5}$ and 0·3 in ascending order.

You must show all your working. [3]

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Smallest value ⟶ Greatest value

Examiner only

11. Complete each row of the following table.
The first row has been completed for you. [3]

Place	Temperature at 10 a.m.	Change	Temperature at 6 p.m.
Cwmbran	2°C	Down 4°C	−2°C
Llanelli	−3°C	Down 1°C	
Llanidloes	−4°C		−1°C
Porthmadog		Up 4°C	3°C

12. Write 7%, $\frac{3}{5}$ and 0·3 in ascending order.

You must show all your working. [3]

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Smallest value ⟶ Greatest value

Examiner only

16. *(a)* Factorise $x^2 - 7x + 12$, and hence solve $x^2 - 7x + 12 = 0$. [3]

(b) Expand and simplify $(5x - 2)^2$. [2]

Examiner only

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

21:45 on 20th March, 2021.

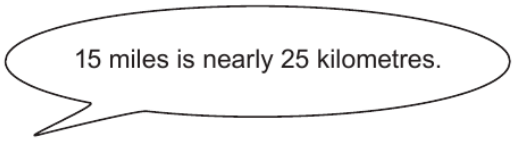
It was left continuously filming until the battery ran out.

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

15. *(a)* (i) Expand $x(x^2 + 7)$. [2]

(ii) Expand and simplify $(x - 5)(3x - 4)$. [2]

(b) Sarah buys and sells antique clocks.
On Monday, Sarah had n clocks.
At the end of the day on Tuesday, she had 5 times as many clocks as she had on Monday.
On Wednesday, she sold 27 clocks.

(i) At the end of the day on Wednesday, Sarah had fewer clocks than she had on Monday.
Write an inequality, in terms of n, that shows this information. [2]

(ii) Solve your inequality to find the greatest number of clocks that Sarah could have had on the Monday. [3]

Examiner only

5. The length of a rectangle is double its width.
The area of the rectangle is greater than 60 cm^2.
The perimeter of the rectangle is less than 40 cm.

Give a possible width and length of the rectangle.
Calculate the area and the perimeter of this rectangle.
You must show all your working.

Use the answer spaces to clearly identify which is the area and which is the perimeter. [5]

Width = ... cm Length = ... cm

Area = ... cm^2 Perimeter = ... cm

Examiner only

16. Two time periods are measured as 4 hours 40 minutes and 2 hours 50 minutes.
Each measurement is correct to the nearest 10 minutes.

What is the least possible sum of these two time periods?
Give your answer in hours and minutes. [3]

Answer = ... hours ..... minutes

Examiner only

9. Write an expression, in terms of x, to represent each of the following.

(a) 5 more than x [1]

(b) x less than 3 [1]

(c) half of x [1]

10. (a) What is 2 litres approximately equal to?
Circle your answer. [1]

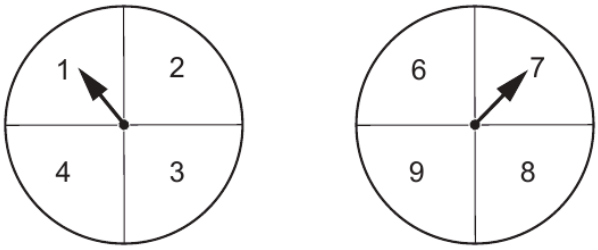
2 pints 3 pints 3·5 pints 4·4 pints 200 pints

(b) What is 32 km approximately equal to?
Circle your answer. [1]

16 miles 20 miles 32 miles 51 miles 64 miles

Examiner only

15. Vera has two fair spinners.
Each spinner is divided into quarters.
One spinner shows the values 1, 2, 3 and 4.
The other spinner shows the values 6, 7, 8 and 9.

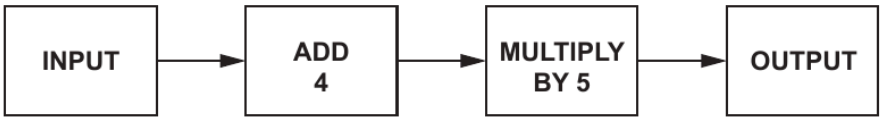


Vera spins the two spinners. She then multiplies the two values together to form a product.
For example, the diagram above forms the product $1 \times 7 = 7$.

Consider the ways in which all the possible products can be formed.
Calculate the probability that the spinners will form a product that is a factor of 36.
You must show all your working to justify your answer. [4]

Examiner only

1. A number machine is shown below.



Complete the table below. [5]

INPUT	OUTPUT
–7	
	–100
2·5	
n	

Space for working:

3300U301 03

2. **Estimate** the value of 33 × 7940.
You must show your approximations in your working. [2]