Name	Date started	Target end date

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

Recurring decimals: recognising the dot (or bar) notation for recurring digits, converting between simple recurring decimals and fractions, and distin

REVISE
.wales

F2.06 — Recurring decimals — recognise & express

Spec 1.9.1 — Unit 2 (no calculator)

Recurring decimals: recognising the dot (or bar) notation for recurring digits, converting between simple recurring decimals and fractions, and distinguishing rational numbers (which terminate or recur) from irrational numbers (which do not). 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: ~14 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (9 marks across 9 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).*

Recurring decimals — recognise & express — what the new spec asks

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

Recurring decimals 1.1.2

- Recognise and use the dot notation for recurring decimals.
- Convert between simple recurring decimals and fractions.
- Identify which fractions terminate and which recur.

Rational vs irrational 1.1.2

- Define a rational number as a/b with b ≠ 0.
- Identify common irrationals: π, $\sqrt{2}$, $\sqrt{3}$.
- Classify a given number as rational or irrational.

Equivalence 1.1.2

- Recall key recurring forms: 1/3, 2/3, 1/9, 1/11.
- Convert a fraction to its decimal by division.
- Identify which decimals are exact and which are rounded.

Exam strategy 1.1

- Non-calculator — long division for fraction → decimal.
- Check whether the question wants exact or rounded form.
- Use dots over digits, not '…', in final answer.

Crib sheet »

Recurring decimals — recognise & express in one page

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

Recurring notation

A dot over a digit means it recurs forever.

$0.\dot{3}$ = 0.333… $0.\dot{1}\dot{6}$ = 0.161616…

Dots over the first and last digit of the repeating block.

Common conversions

$$1/3 = 0.\dot{3} \quad 2/3 = 0.\dot{6}$$

1/9 = $0.\dot{1}$, 2/9 = $0.\dot{2}$, …, 1/11 = $0.\dot{0}\dot{9}$.

Terminating vs recurring

A fraction *terminates* if its denominator (in lowest terms) has only 2s and 5s as prime factors.

1/8 = 0.125 (terminates). 1/6 = $0.1\dot{6}$ (recurs).

Rational numbers

Rational = can be written as a fraction a/b (b ≠ 0).

Every terminating or recurring decimal is rational.

3, −5, 0.75, $0.\dot{3}$ are all rational.

Irrational numbers

Irrational = cannot be written as a/b.

Decimal goes on forever without repeating.

π, $\sqrt{2}$, $\sqrt{3}$ are irrational.

Common traps

- Treating $0.\dot{3}$ as 0.3 (it's 1/3, not 3/10).
- Calling π rational because we write it as a symbol.
- Forgetting $\sqrt{4} = 2$ *is* rational.

Examiner only

1. *(a)* Calculate 39% of £576. [2]

(b) Calculate $\frac{3}{7}$ of 100.

Give your answer correct to the nearest whole number. [2]

(c) How many quarters are there in 10? [1]

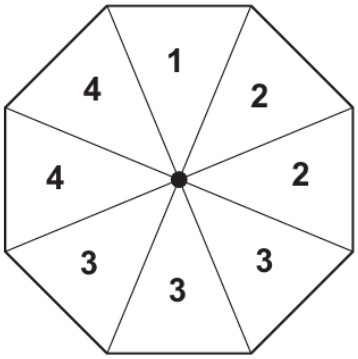
(d) What **fraction** is equal to 50% of $\frac{1}{6}$? [1]

(e) Circle the fraction that is a recurring decimal. [1]

$\frac{21}{35}$ $\frac{10}{12}$ $\frac{17}{68}$ $\frac{15}{24}$ $\frac{51}{170}$

Examiner only

11. Seren has a fair 8-sided spinner.
The sections of the spinner are numbered 1, 2, 2, 3, 3, 3, 4, 4.



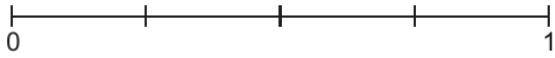
(a) Which number is the spinner most likely to land on? [1]

.....

(b) Circle one term from the list below that describes the probability of the spinner landing on a 2. [1]

impossible **unlikely** **even chance** **likely** **certain**

(c) On the probability scale below, mark with an arrow the probability of the spinner landing on a 3. [1]



Examiner only

12. *(a)* Calculate 39% of £576. [2]

(b) Calculate $\frac{3}{7}$ of 100.

Give your answer correct to the nearest whole number. [2]

(c) How many quarters are there in 10? [1]

(d) What **fraction** is equal to 50% of $\frac{1}{6}$? [1]

(e) Circle the fraction that is a recurring decimal. [1]

$\frac{21}{35}$ $\frac{10}{12}$ $\frac{17}{68}$ $\frac{15}{24}$ $\frac{51}{170}$

Examiner only

2. *(a)* One of these fractions can be written as a recurring decimal.
Circle this fraction. [1]

$\frac{117}{234}$ $\frac{5}{8}$ $\frac{13}{65}$ $\frac{24}{54}$ $\frac{3}{16}$

(b) Which one of the following numbers is a factor of 92?
Circle your answer. [1]

31 23 29 36 6

(c) Which one of the following numbers is a multiple of 17?
Circle your answer. [1]

1953 1653 2053 1853 1753

Examiner only

2. (a) Which **one** of the following fractions can be written as a recurring decimal? Circle your answer. [1]

$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{6}$ $\frac{1}{8}$ $\frac{1}{10}$

.....

.....

(b) Which **three** numbers from the list below are prime numbers? [2]

27 31 35 39 43 47 51 55

The three prime numbers are:

..... , ... and .....

(c) $81 = 3^n$.

Write down the value of n. [1]

.....

.....

n = ...

Examiner only

12. (a) Which **one** of the following fractions can be written as a recurring decimal? Circle your answer. [1]

$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{6}$ $\frac{1}{8}$ $\frac{1}{10}$

.....

.....

(b) Which **three** numbers from the list below are prime numbers? [2]

27 31 35 39 43 47 51 55

The three prime numbers are:

..... , ... and .....

Examiner only

1. Solve each of the following equations.

(a) $\frac{x}{5} = 20$ [1]

(b) $7m + 3 = 31$ [2]

2. (a) Evaluate 55% of 42·8. [2]

(b) Which one of the following is **not** equal to a recurring decimal?
Circle the correct answer. [1]

$\frac{2}{11}$ $\frac{2}{3}$ $\frac{3}{16}$ $\frac{7}{9}$ $\frac{5}{6}$

Examiner only

1. Solve each of the following equations.

(a) $\frac{x}{5} = 20$ [1]

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