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Centre Number

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Student Number

2025 TESTIFI EXAMINATION

Irrational Numbers

General Instructions

- Reading time – 5 minutes
- Working time – 20 minutes
- Write using black pen
- Calculators approved by NESA may be used
- A reference sheet is provided at the back of this paper
- For questions in Section II, show relevant mathematical reasoning and/or calculations
- Write your Centre Number and Student Number at the top of this page

Total marks:
12

Section I – 2 marks

- Attempt Questions 1–2

Section II – 10 marks

- Attempt Questions 3–7

Section I

2 marks

Attempt Questions 1–2

Allow about 15 minutes for this section

Use the multiple-choice answer sheet for Questions 1–2.

1 Classify each number as rational or irrational: $0.\overline{37}$, 0.25 , $\sqrt{7}$, $\frac{5}{8}$

- A. All four numbers are rational
- B. Only $\sqrt{7}$ and $\frac{5}{8}$ are irrational
- C. Only $\sqrt{7}$ is irrational
- D. $0.\overline{37}$ and $\sqrt{7}$ are irrational

2 Which of the following numbers is irrational?

- A. $\frac{1}{2}$
- B. $\sqrt{2}$
- C. 0.75
- D. 3

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Centre Number

Irrational Numbers

Section II Answer Booklet

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Student Number

10 marks

Attempt Questions 3–7

Instructions

- Write your Centre Number and Student Number at the top of this page.
- Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.
- Your responses should include relevant mathematical reasoning and/or calculations.
- Extra writing space is provided at the back of this booklet. If you use this space, clearly indicate which question you are answering.

Please turn over

Question 3 (1 marks)

1

Which of the following numbers is irrational? π , $\frac{1}{2}$, 0.75, 3. Justify your answer.

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Question 4 (1 marks)

1

Which of the following numbers is irrational? $\sqrt{2}$, 0.5, $\frac{2}{3}$, 4. Justify your answer.

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Question 5 (2 marks)

2

Classify each number as rational or irrational. Give a reason for your answer.

0.101010..., 0.5, $\sqrt{3}$, 0.333..., 2.718281...

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Question 6 (3 marks)

3

Estimate the position of $\sqrt{5}$ on a number line. Explain which two whole numbers it lies between and justify your answer with reasoning.

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Question 7 (3 marks)

3

Estimate the position of π on a number line. Explain which two whole numbers it lies between and justify your answer with reasoning.

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End of paper