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PREFACE

Updated Syllabus 2025-2026-2027

A committed team of enthusiastic mathematicians has designed this valuable resource for O Level students, with the aim of helping them practice systematically and master key mathematical skills. This edition has been carefully structured sub topic by sub topic, strictly in line with the latest Cambridge Assessment International Education (CAIE) syllabus (2025–2027). With this approach, learners can strengthen their concepts, improve problem-solving skills, and build the confidence required to excel in their examinations.

The questions included are fully consistent with the CAIE examination format. Students can therefore attempt them with a realistic and exam-oriented mindset. A wide range of questions from all variants has been compiled to ensure diverse practice opportunities for each topic. To make preparation even more effective, detailed solutions based on the official Mark Scheme are provided, allowing students to understand examiner expectations and develop accurate answering techniques.

Every effort has been made to check and edit this book to minimize errors. Nevertheless, constructive feedback is always welcome, as it will help us improve future editions. For suggestions or queries, please contact us at:

We are grateful to the experienced Mathematics teachers who contributed their guidance and expertise, making this book an effective and reliable companion for both classroom learning and self-study.

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- Customer satisfaction is our priority and achieve this goal we will always, work as a team.
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- Every employee will influence to contribute towards
- Quality improvement to sustain through ideas and innovation.

- گاہک کا اطمینان ہماری اولین ترجیح ہے۔
- اپنے مقصد کے حصول کیلئے ہم ہمیشہ بحیثیت ایک ٹیم کام کرتے ہیں۔
- گاہک کی ضروریات اور ماحولیاتی حالات اور احتیاطی تدابیر کہ مدنظر رکھتے ہوئے معیاری اشیاء فراہم کرتے ہیں۔
- ہر فرد اپنے خیالات اور تخلیقات کے ذریعے بہتر کوالٹی اور اس کو برقرار رکھنے کیلئے موثر کردار ادا کرتا ہے۔

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Q9/01/S/P/18

1

0.2	2	$\sqrt{2}$	$\frac{1}{3}$	0.83	8	81

From the numbers listed above, write down

(a) a square number,

Answer ..... [1]

(b) a cube number,

Answer ..... [1]

(c) an irrational number.

Answer ..... [1]

Q24(a)/01/S/P/18

2 Find the Highest Common Factor (HCF) of 36 and 54.

Answer ..... [1]

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Q8/11/O/N/18

3 (a) Write down an irrational number which has a value between 4 and 5.

Answer ..... [1]

(b) Kofi is using number cards to form a 5-digit number.
His number is a multiple of 8.
Complete the final digit of his number.

1	2	3	4	

[1]

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Q17/11/O/N/18

4

$$120 = 2^3 \times 3 \times 5$$

(a) Express 1200 as the product of its prime factors.

Answer ..... [1]

(b) Find the smallest value of n, such that $120n$ is a square number.

Answer ..... [1]

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Q15/12/M/J/19

5 (a) Write 168 as a product of its prime factors.

..... [2]

(b) The highest common factor of 168 and N is 42.

Given that $200 < N < 300$, find the two possible values of N.

$N =$ ..... and $N =$ ..... [2]

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Q14/11/O/N/19

6 $p = 2^3 \times 3 \times 5^2$ $q = 2 \times 3^2 \times 5$

(a) Find the highest common factor (HCF) of p and q.

..... [1]

(b) Find the lowest common multiple (LCM) of p, q and 21.
Give your answer as the product of prime factors.

..... [1]

(c) Find the smallest integer N, such that pN is a square number.

$N =$ ..... [1]

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