

TEST SCHOOL
121/2 MATHEMATICS
Paper 2
Form 1 End Term Examination

Time: 2 ½ Hours

Name: Adm No:
 School: Class:
 Signature: Date:

INSTRUCTIONS TO CANDIDATES

- (a) Write your name and index number in the spaces provided at the top of this page.
- (b) Write your school name, sign and write the date of the examination in the spaces provided above.
- (c) This paper consists of **Two** sections: **Section I** and **Section II**.
- (d) Answer **ALL** questions in Section I and any **five questions** from Section II.
- (e) Marks may be given for correct working, relevant points, and clear presentation.
- (f) Non-programmable silent electronic calculators may be used where necessary.
- (g) KNEC Mathematical Tables may be used.
- (h) This paper consists of **7 printed pages**.
- (i) Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.
- (j) Candidates should answer the questions in English.

For Examiner's Use Only

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

SECTION II

17	18	19	20	21	22	23	Total	Grand Total

SECTION I

1. Write each of the following numbers in standard form:

(a) 0.00037

(b) 3450000

2. Convert each of the following from standard form to ordinary numbers:

(a) 4.2×10^5

(b) 6.0×10^{-3}

3. Evaluate $(3.0 \times 10^5) \times (2.0 \times 10^3)$ and leave your answer in standard form.

4. Find the reciprocal of 0.25.

5. A number is written as 4.8×10^6 . Write it in ordinary form. Then divide this number by 2000 and express the result in standard form.

6. Find the area of a rectangle whose length is $(2x + 3)$ cm and width is $(x - 1)$ cm. If $x = 5$, find the area.

7. Divide 240 sweets between Ann and Bob in the ratio 3:5. How many sweets does each get?

8. A car travels 240 km in 3 hours. What is its speed in km/h? If it continues at the same speed, how far will it travel in 5 hours?

9. Simplify: $3\frac{1}{4} - 1\frac{3}{8} + 2\frac{1}{2}$. Express your answer as a mixed number.

10. A bag contains 60 marbles. The ratio of red marbles to blue marbles is 2 : 3. How many red marbles are there?

11. A rectangle has length 12 cm and width 8 cm. Find the area and perimeter of the rectangle. Hence find the side length of a square that has the same area as the rectangle.

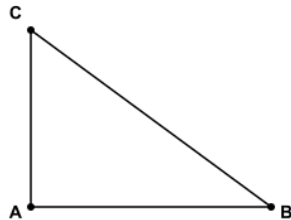
12. The sum of three consecutive integers is 72. Find the three integers.

13. A cyclist travels at 15 km/h for 2 hours, then at 10 km/h for 1 hour. Calculate the total distance travelled and the average speed for the whole journey.

14. Simplify: $4(2x - 3) - 3(5x + 2)$.

15. The scale of a map is 1 : 50000. Two towns are 8 cm apart on the map. What is the actual distance between the towns in kilometres?

16. The angles of a triangle are in the ratio 2 : 3 : 4. Find the size of each angle.



SECTION II

Answer any five questions from this section.

17. ; ; Convert 0.625 to a fraction in simplest form; [10 marks]

Evaluate: $(-3) \times 4 + 12 \div (-2)$

Simplify: $\frac{3}{4} - \frac{1}{2} + \frac{5}{8}$

Convert 0.625 to a fraction in simplest form.

A shopkeeper had 120 kg of sugar. He sold $\frac{2}{5}$ of it in the morning and $\frac{1}{3}$ of the remainder in the afternoon.
How many kilograms were left?

18. ; ; If $x = 2$ and $y = -3$, find the value of $2x^2 - 3xy + y^2$; [10 marks]

Simplify: $3a + 2b - a + 3b$

Expand: $2(3x - 4y) + 3(x + 2y)$

If $x = 2$ and $y = -3$, find the value of $2x^2 - 3xy + y^2$.

The sum of two consecutive integers is 45. Find the integers.

19. Divide 240 in the ratio 3:5; ; ; [10 marks]

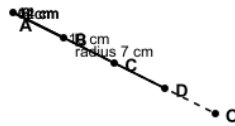
Divide 240 in the ratio 3:5.

If 5 men can complete a job in 12 days, how many men are needed to complete the same job in 4 days?

A recipe requires 2 cups of flour and 3 cups of sugar. If 8 cups of flour are used, how much sugar is needed?

The price of an item is increased from Ksh 200 to Ksh 250. Find the percentage increase.

20. Find the perimeter of a rectangle with length 12 cm and width 8 cm; Find the area of a triangle with base 10 cm and height 6 cm; A square has an area of 64 cm^2 . Find its perimeter; [10 marks]



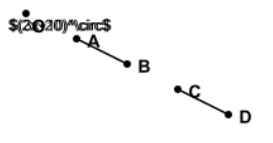
Find the perimeter of a rectangle with length 12 cm and width 8 cm.

Find the area of a triangle with base 10 cm and height 6 cm.

A square has an area of 64 cm^2 . Find its perimeter.

The figure below shows a shape consisting of a rectangle and a semicircle. The rectangle is 14 cm long and 10 cm wide. The semicircle has diameter 14 cm. Find the area of the shape. (Take $\pi = \frac{22}{7}$)

21. ; The angles of a triangle are in the ratio 2:3:5. Find the smallest angle; [10 marks]

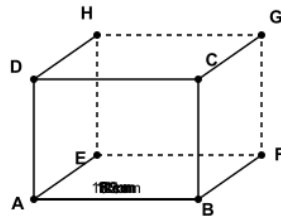


In the diagram below, two lines intersect. Find the value of x . [Diagram: intersecting lines with angles $(2x + 10)^\circ$ and $(3x - 20)^\circ$]

The angles of a triangle are in the ratio 2:3:5. Find the smallest angle.

In the diagram below, AB is a straight line. Find angle y . [Diagram: A---C---B, with D above line, angle $ACD = 110^\circ$, angle $DCE = y$, angle $ECB = 70^\circ$]

22. Find the volume of a cuboid with length 8 cm, width 5 cm, and height 3 cm; ; [10 marks]



Find the volume of a cuboid with length 8 cm, width 5 cm, and height 3 cm.

A cylindrical container has a radius of 7 cm and a height of 14 cm. Find its volume. (Take $\pi = \frac{22}{7}$)

A rectangular tank measures 2 m by 1.5 m by 1.2 m. How many litres of water can it hold? (1 m³ = 1000 litres)

The surface area of a cube is 150 cm^2 . Find the length of its edges.

23. A map has a scale of 1:50000. Two towns are 8 cm apart on the map. Find the actual distance in kilometres;
The bearing of point A from point B is 060° . Draw a diagram showing this bearing; [10 marks]



A map has a scale of 1:50000. Two towns are 8 cm apart on the map. Find the actual distance in kilometres.

The bearing of point A from point B is 060° . Draw a diagram showing this bearing.

A ship sails from port P on a bearing of 120° for 40 km. Using a scale of 1 cm to 10 km, construct the path and then the ship changes course to a bearing of 030° for 30 km. Determine by measurement the distance PR from the starting point to the final point.

121/2 MATHEMATICS MARKING SCHEME

Form 1 Paper 2

SECTION I (50 marks)

1. Write each of the following numbers in standard form:

(3 marks)

(a) $0.00037 = 3.7 \times 10^{\blacksquare\blacksquare}$ (B1) [1]

(b) $3450000 = 3.45 \times 10^{\blacksquare}$ (