

INTERSECONDARY SCHOOLS EXAMINATION SERIES ISESE



FORM TWO OPENING TEST JULY MATHEMATICS

043

Time: 02:30 Hours

Year 2026

INSTRUCTIONS

1. This paper consists of **ten (10) compulsory** questions.
2. All writing must be in blue or black ink **except** drawings which must be in pencil.
3. All necessary working and answers for each question must be shown clearly.
4. Non-programmable calculators, geometric instruments and graph papers may be used where necessary.

1.a) A student named Asha is helping her mother at a small shop. She uses numbers to calculate the total cost of items bought by customers, measures quantities of sugar and rice, and keeps records of daily sales. Based on Asha's activities, explain what is mathematics?

b) Explain five mathematical skills that are useful in your daily life activities.

2. a) The base of a lid of bucket has an area of $\frac{25}{484}\pi m^2$. Find its diameter in decimal.

b) A car travels $\frac{2}{3}$ of the total distance to its destination at a speed of 30km/h, and then travels the remaining distance at a speed of 40km/h. If the car took 4 hours for the whole journey, what is the total distance of the journey? Express your answer as a repeating decimal.

3. A man gave $\frac{7}{25}$ of his money to his son, $\frac{2}{9}$ of the remaining amount to his daughter, and the rest amount to his wife. If his wife got Tshs. 11,990,300.

a) How much money to the nearest ten thousands did the man have in total?

b) Estimate the amount of money to the nearest thousands collected by his daughter.

4.a) Find the third proportional of $2n^2$ and $3n^2$.

b) An alloy is made up of metals x and y in the ratio 2: 4: 1 by mass. How much mass of x is required if 8kg of x is used to make the alloy?

5. A certain school placed two orders with the stationery dealers. The first order was 50 boxes of marker pens and 20 boxes of correction fluid for the total amount of 40,000 Tanzanian shillings. The second order was 10 boxes of marker pens and 20 boxes of correction fluid for the total amount of 24,000 Tanzanian shillings.

(a) Formulate a system of simultaneous equations that describe the cost of a box of marker pen and a box of correction fluid.

(b) Calculate the cost of a box of marker pen and box of correction fluid.

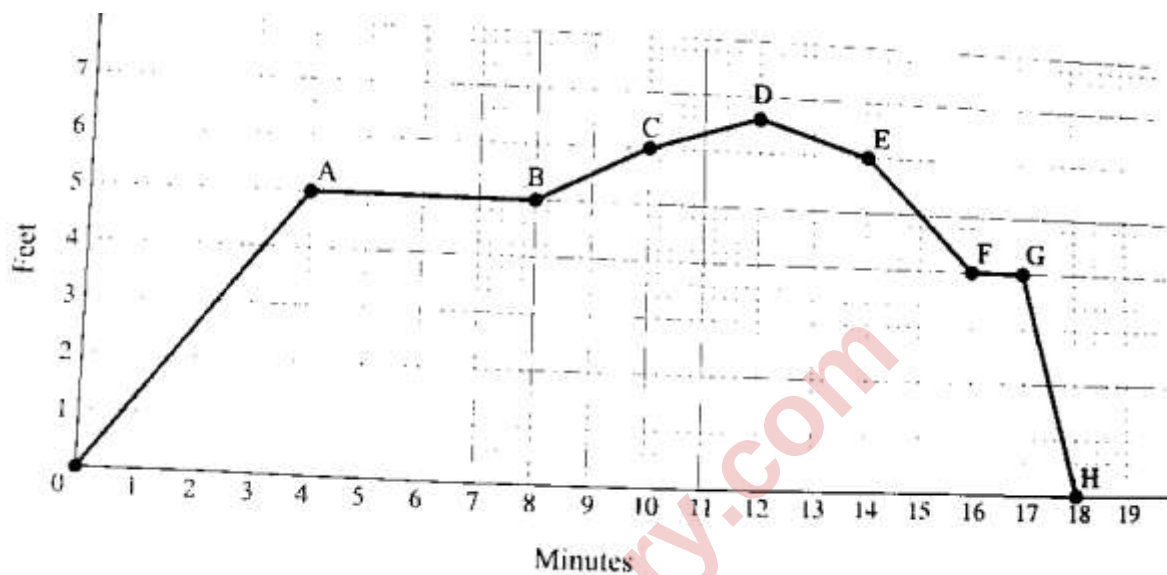
6. (a) The points (4, -2) and (-2, -5) lie on the line $\frac{x}{a} + \frac{y}{b} = 1$. Find the value of a and b .

(b) Find graphically the solution of the given system of linear simultaneous equations.

$$\begin{cases} \frac{x}{2} + \frac{y}{2} = 1 \\ x = 1 + y \end{cases}$$

7.a) Pump A can fill a pool in 5 hours, pump B in 4 hours and pump C in 10 hours. How long will it take to fill the pool if all three pumps are operated at the same time?

(b)



i) During the first 5 minutes of flight, the plane took off to the altitude shown by point A. Estimate the rate of change in altitude.

b) Between points E and F, the plane is descending. Estimate the rate of change of altitude during this time.

c) Is the rate of change in b(ii) positive or negative? Give reasons for your answer.

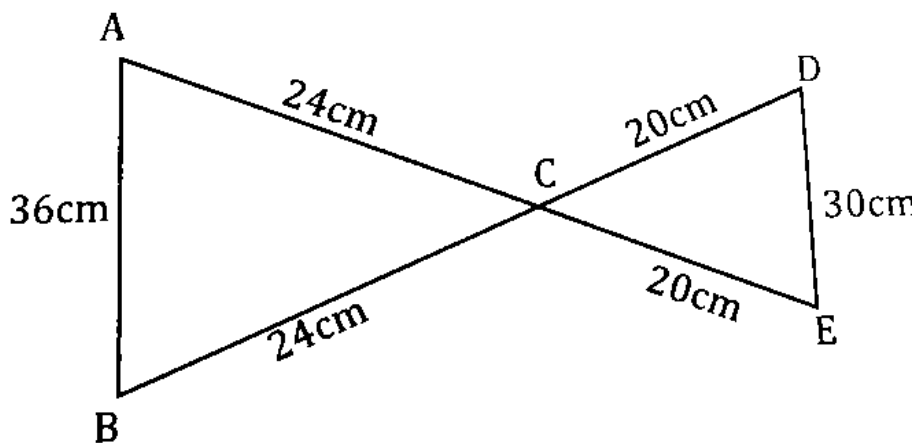
8. (a) Solve the quadratic equation below by using a quadratic formula.

(i) $\frac{x^2}{\left(1\frac{1}{2} - x\right)(2 - x)} = 4$

ii) A piece of wire 40cm long is cut into two parts and each part is then bent into a square. If the sum of the area of these squares is 68 square centimetres, find the length of the two pieces of wire.

b. The side of a square is scaled by a factor of $\sqrt{3}$. If the original side length was $\sqrt{5}$ metres, what is the new area of the square?

9. a) In the figure below $AB=36$ cm, $AC = BC = 24$ cm, $EC = DC = 20$ cm and $ED=30$ cm. Show that triangle ABC and EDC are similar.



b) In a class of 45 students, some study physics or chemistry or both. If 23 students study physics, 33 study chemistry and 10 students do not study neither physics nor chemistry, find the number of students who study both physics and chemistry using the formula.

10. a) Find the value of x in the equation
 $\log(2x + 1) + \log 4 = \log(7x + 8)$.

b) Find the value of each of the following expressions and simplify the answer:
i) $\sin 60^\circ (\cos 45^\circ + \sin 30^\circ)$

ii) $\tan 45^\circ (4 \cos 60^\circ - \sqrt{3} \tan 30^\circ)$.



INTERSECONDARY SCHOOLS EXAMINATION SERIES
ISESE TIME TABLE
FORM TWO PRE NECTA SERIES 01
13th July – 18th July 2026

DATE	SUBJECT(S)
13 th July	HISTORY + B.STUDIES
14 th July	BIOLOGY + ENGLISH
15 th July	CHEMISTRY + HTM
16 th July	PHYSICS + KISWAHILI
17 th July	MATHEMATICS + GEOGRAPHY
18 th July	COMPUTER SCIENCE

GHARAMA

*** SOMO MOJA KWA KIDATO KIMOJA = **20,000/=** KWA MUHULA MZIMA

*** FULL SET KWA KIDATO KIMOJA (KWA MASOMO 11 TU) = **150,000/=** KWA MUHULA MZIMA

ZINGATIA :-

*** GHARAMA ZA MITIHANI HUPANDA KADRI PRE-NECTA SERIES ZITAKAVYOKUWA ZINAENDELEA KUFANYIKA HIVYO LIPIA MAPEMA ILI KUEPUKA USUMBUFU

*** PRE-NECTA SERIES ZITAKUWA ZAIDI YA **10**

MAWASILIANO: 0624 254 757 WHATSAPP TU