KENYA JUNIOR SCHOOL EDUCATION ASSESSMENT (KJSEA)

GRADE 9: MATHEMATICS
CODE: 011 YEAR: 2025 **TIME: 2 HOURS**

Candidate's Name: MARKING SCHEME . **Assessment Number:** 9 .

School Name: JSS . **School Code:** .

Candidate's Signature: . **Date:** .

INSTRUCTIONS TO CANDIDATES:

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1. Write your name and class in the spaces provided above.
2. The paper consists of two sections: Section A and Section B.
3. Answer ALL questions in Section A and Section B.
4. Show all your working in the spaces provided.
5. All questions carry marks as indicated.
6. Mathematical tables and electronic calculators may be used.

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Task	Task 1	Task 2	TOTAL
Question	1	2	3QUESTIONS
Maximum Score	20	10	30 MARKS
Candidate's Score			

This paper consists of **17 printed pages**. Candidates should check the question paper to ascertain that all the pages ar indicated and that no questions are missing.

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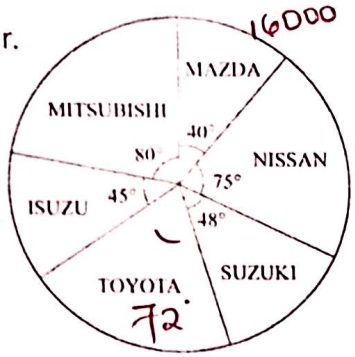
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:CTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

1. 1. The cube root of 3375 is:

A. 12 B. 13 ~~C.~~15 D. 18

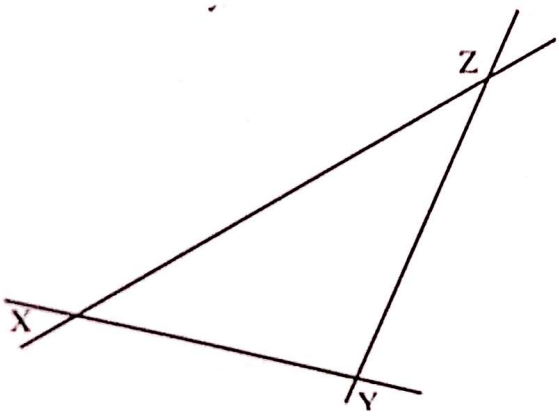
2. The pie chart below represents the types of vehicles imported in Kenya in a certain year.



If 16, 000 Mazdas were imported, how many more Toyotas than Suzukis were imported?

A. 48 000 B. 28 800 C. 19 200 ~~D.~~ 9 600

3. Triangle XYZ shown below, has been Working Space drawn accurately.



What is the measure of angle ZXY?

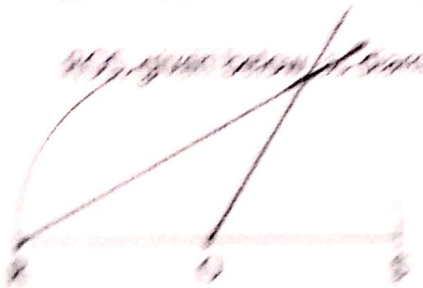
A.36 ~~B.~~42 C.108 D.136

WORKING SPACE

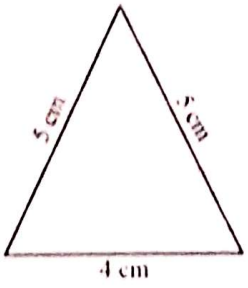
3375
5 675
5 135
5 27
27
3 9
3 3
3
$5^3 \times 3^3$
$5 \times 3 = 15$

$40^\circ = 16000$
$24^\circ + 6$
24×16000
40 9,600 ca

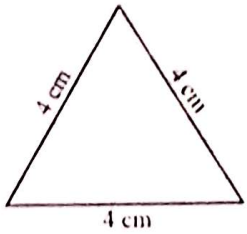
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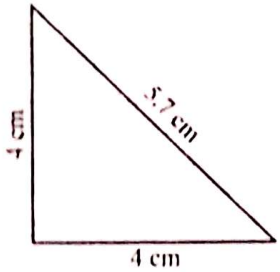
6. Below are four different types of triangles.



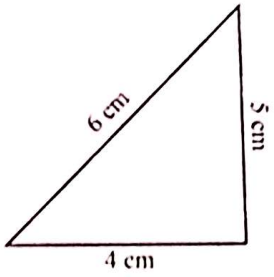
(i)



(ii)



(iii)



(iv)

Which one of the following pairs of triangles correctly describes the types of triangles above?

A. (i) and (iii) are isosceles triangles

B. (ii) and (iv) are scalene triangles

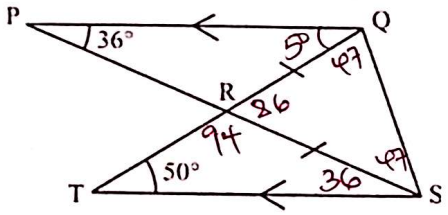
C. (ii) and (iii) are right angled triangles

D. (i) and (ii) are equilateral triangles

WORKING SPACE

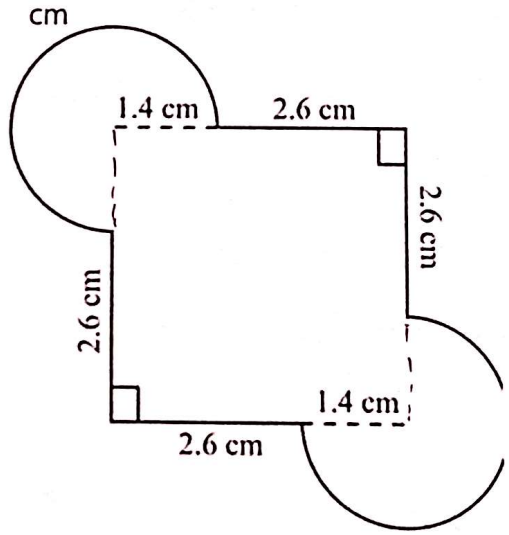
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9. In the figure below, lines PQ and TS are parallel. Lines RQ and RS are equal. Angle QPR = 36° and angle STR = 50°. P. What is the size of angle PQS?



A. 47°C B. 86 ° C C. 94° ~~D. 97°~~

10. A design was made up of straight edges of length 2.6 cm and arcs of circles of radii 1.4 cm as shown in the figure below 2.6 cm



What is the area of the design?

A. 16.00 cm B. 22.16 cm

C. 25.24 cm D. 28.32 cm

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Square
$4 \times 4 = 16 cm^2$

$\left(\frac{3}{4} \times \frac{22}{7} \times 1.4 \times 1.4\right)$

$8 cm^2$

Total $16 + 8 = 24 cm^2$

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11. Simplify: $3^5 \div 3^2$

~~A. 3^3~~ B. 3^7 C. 3^2 D. 9

12. Solve for x: $7x - 4 = 24$

A. 3 ~~B. 4~~ C. 6 D. 8

13. Evaluate $\log_{10} 0.01$

~~A. -2~~ B. -1 C. 0.1 D. 2

14. Which of the following is a Pythagorean triple?

~~A. (8, 15, 17)~~

B. (10, 12, 15)

C. (6, 8, 11)

D. (7, 10, 14)

15. Find the compound interest on Ksh 20,000 at 10% per annum for 2 years.

A. 2,000 ~~B. 4,200~~

C. 4,000 D. 2,100

16. A fair die is rolled once. The probability of getting an even number is:

~~A. 1/2~~

B. 1/3

C. 1/6

D. 2/3

WORKING SPACE

laws of Indices we use
Division - subtract the power

3^3

$\frac{7x}{7} = \frac{28}{7}$

$7x = 4$

$0.01 \Rightarrow \frac{1}{100} \Rightarrow 10^{-2}$

$\log_{10} 10^{-2} = -2$.

$8^2 + 15^2 = 17^2$.

20,000 × $\frac{10}{100}$ Sh. 2000 1st

22,000 × $\frac{10}{100}$ 2,200 2nd

Total 4200

has 6 faces
1, 2, 3, 4, 5, 6
even 2, 4, 6

$\frac{3}{6} = \frac{1}{2}$.

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17. Expand:

(x+2)(x–5)

~~A.~~ $x^2-3x-10$

B. $x^2-3x+10x$

C. $x^2+7x-10$

D. $x^2-10x-10$

WORKING SPACE

$x(x-5)+2(x-5)$

$x^2-5x+2x-10$

$x^2-3x-10$

18. Find the determinant of matrix

|1 2|

|3 5|

A. 1 ~~B.~~ -1 C. 2 D. -2

$\begin{vmatrix} 1 & 2 \\ 3 & 5 \end{vmatrix}$

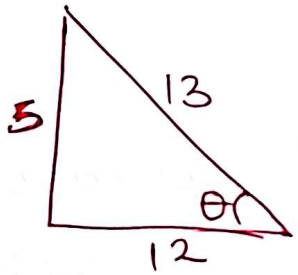
$1\cdot5 - 2\cdot3$

$5-6$

$=-1$

19. If cos θ = 12/13, find sin θ (θ acute).

~~A.~~ 5/13 B. 12/13 C. 13/5 D. 1/13



SOHCAHTOA

$\sin\theta = 5/13$

20. A trader bought goods worth Ksh 25,000. He sold them at a loss of 10%. The selling price was:

~~A.~~ 22,500

B. 25,000

C. 27,500

D. 30,000

100% = 25,000

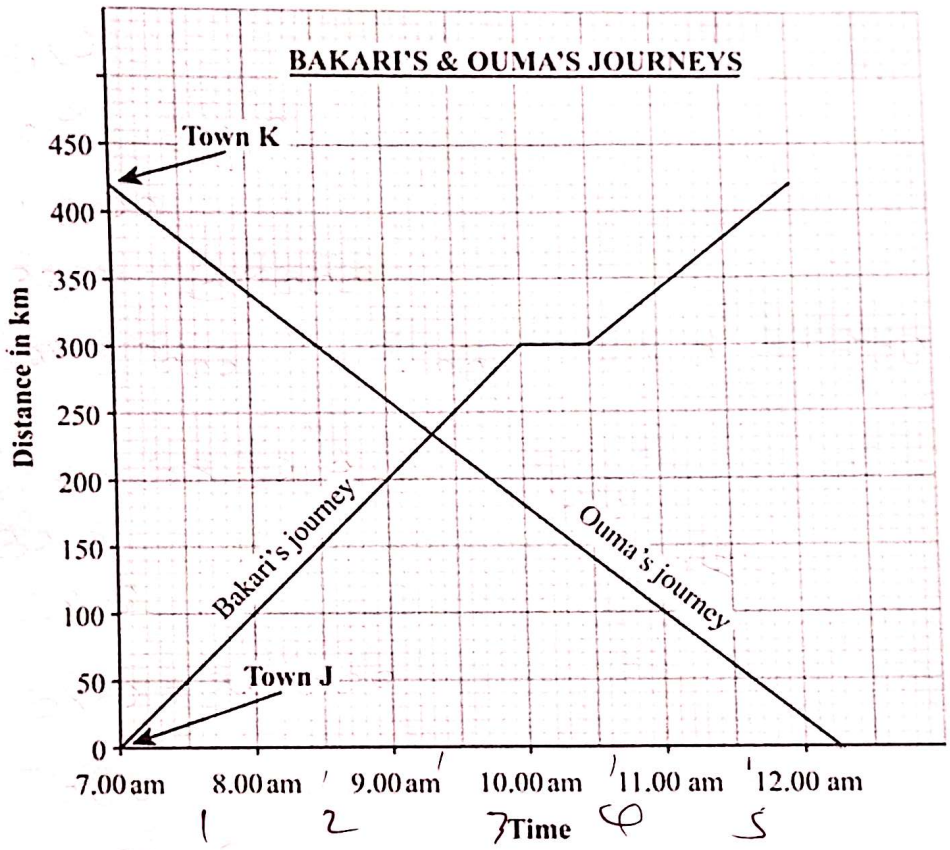
90% ?

$\frac{90 \times 25000}{100} = 22500$

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13. Bakari and Ouma travelled to different destinations. Both started at 7.00 am; Bakari started from town J to town K While Ouma started from K to J



a) How far from town J was Bakari at 30 minutes of his journey?

50km.

(b) Find its average speed of Ouma.

distance 420km

T.T 5 hours 15min

60

21/4 hours

$S = D/T$

$420 \times \frac{4}{21}$

20km/h.

(c) whose speed was higher?

Bakari because he arrived 15 mins earlier than Ouma.

24. Two towns P (37°E) and Q (49°E) lie along the equator.

(a) Find the distance between them in km.

$49° - 37° = 12°$

$1° = 111.1\ km$

$12° \times 111.1 = 1333\ km.$

(b) Find the difference in local time between the two towns.

$1° = 4\ min$

$12° \times 4 = 48\ mins$

25. The matrix $B = \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$

c

(a) Find det (B). determinant $4 - 6 = -2$

$-2\begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} -8 & -6 \\ -4 & -2 \end{bmatrix}$

(b) Find B^{-1}.

$-\frac{1}{2}\begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$ also $-\frac{1}{2}\begin{bmatrix} 1 & -2 \\ -3 & 4 \end{bmatrix} = \begin{bmatrix} -\frac{1}{2} & 1 \\ 1.5 & -2 \end{bmatrix}$

$= \begin{bmatrix} -0.5 & 1 \\ 1.5 & -2 \end{bmatrix}$

(c) Use B^{-1} to solve the simultaneous equations: $4x + 3y = 11$, $2x + y = 5$.

$(4x + 3y = 11)\ 2$

$(2x + y = 5)\ 4$

$8x + 6y = 22$

$8x + 4y = 20$

$2y = 2$

$y = 1$

$2x + 1 = 5$

$2x = 4$

$x = 2$

26. Solve graphically the simultaneous equations:

$y = 2x + 1$ and $y = -x + 4$.

27. A cone has radius 7 cm and height 24 cm.

(a) Find its slant height.

$7^2 + 24^2$

$49 + 576$

$\sqrt{625}$

$= 25$ cm.

(b) Find its curved surface area.

$\frac{22}{7} \times 7 \times 25$ (πRL)

$= 550$ cm^2.

(c) Find its volume.

$\frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \times 24$ $\left(\frac{1}{3}\pi r^2 h\right)$

$= 1232$ cm^3

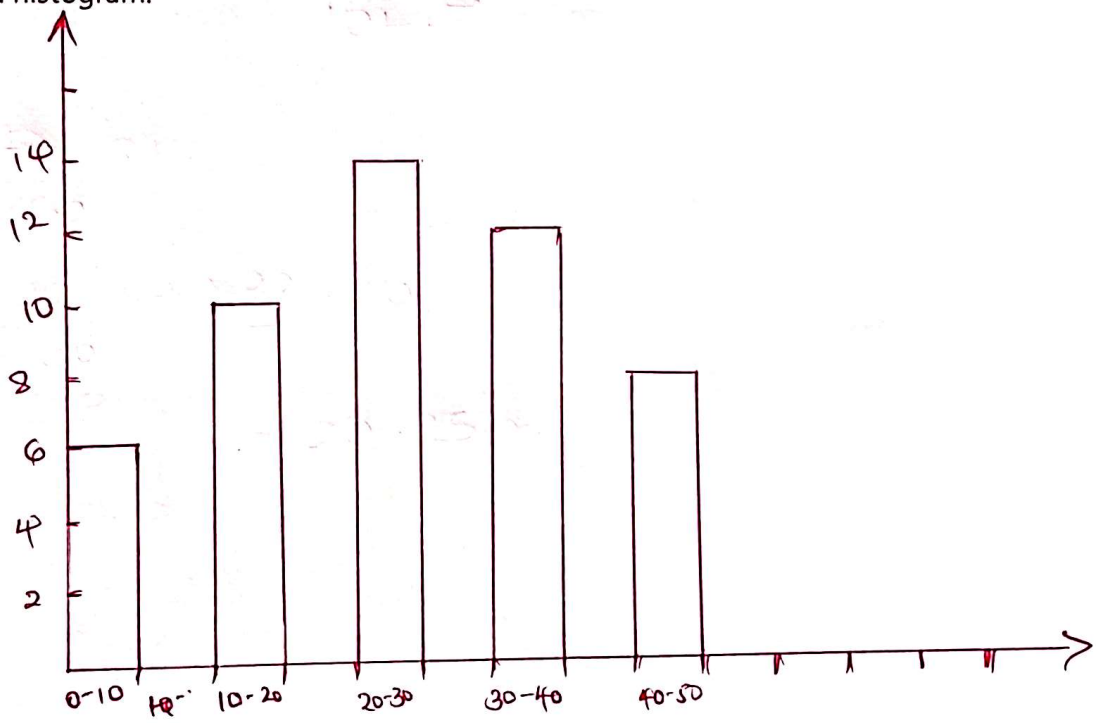
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30. The marks of 50 students are recorded as follows:

Marks:	0–10,	10–20,	20–30,	30–40,	40–50
Frequency:	6	10	14	12	8

(a) Draw a histogram.



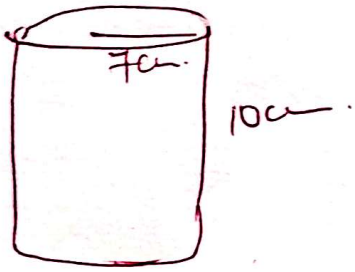
(b) Estimate the mean from the histogram.

30

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31. A cylindrical container has radius 7 cm and height 10 cm.

a) Draw a neat sketch of its net. (1mk)



b) Find its volume. (Use π = 3.142). (3mks)

$\pi r^2 h$

$\frac{22}{7} \times 7 \times 7 \times 10$

$154 \times 10 = 1540 cm^3$.

21. Find the equation of the line through points (1, 2) and (3, 6). (3mks)

$\frac{y_1 - y_0}{x_1 - x_0} \Rightarrow \frac{6-2}{3-1} = \frac{4}{2} = 2$

$\frac{y-2}{(x-1)} = 2 \quad y-2 = 2(x-1)$

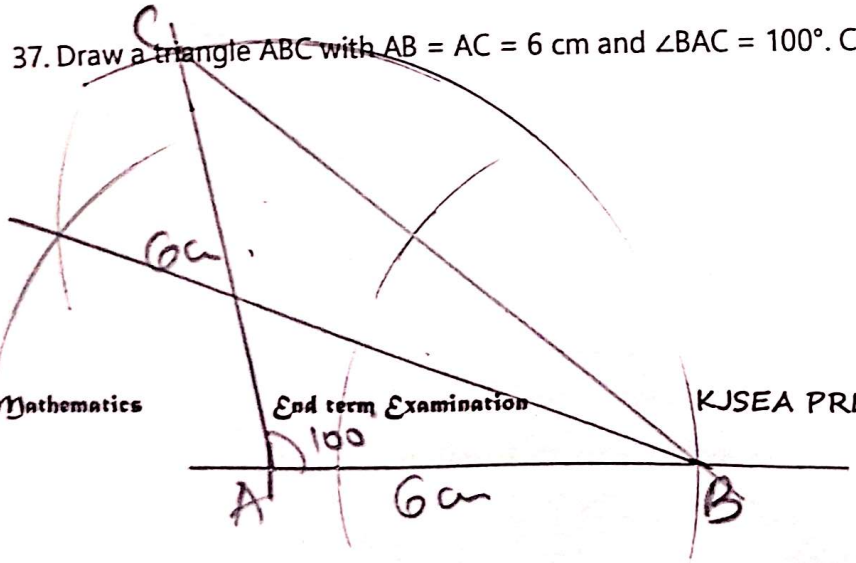
$y - 2 = 2x - 2 \quad y = 2x$.

22. A bag contains 5 red, 4 green, and 3 blue balls. A ball is picked at random. Find the probability it is:

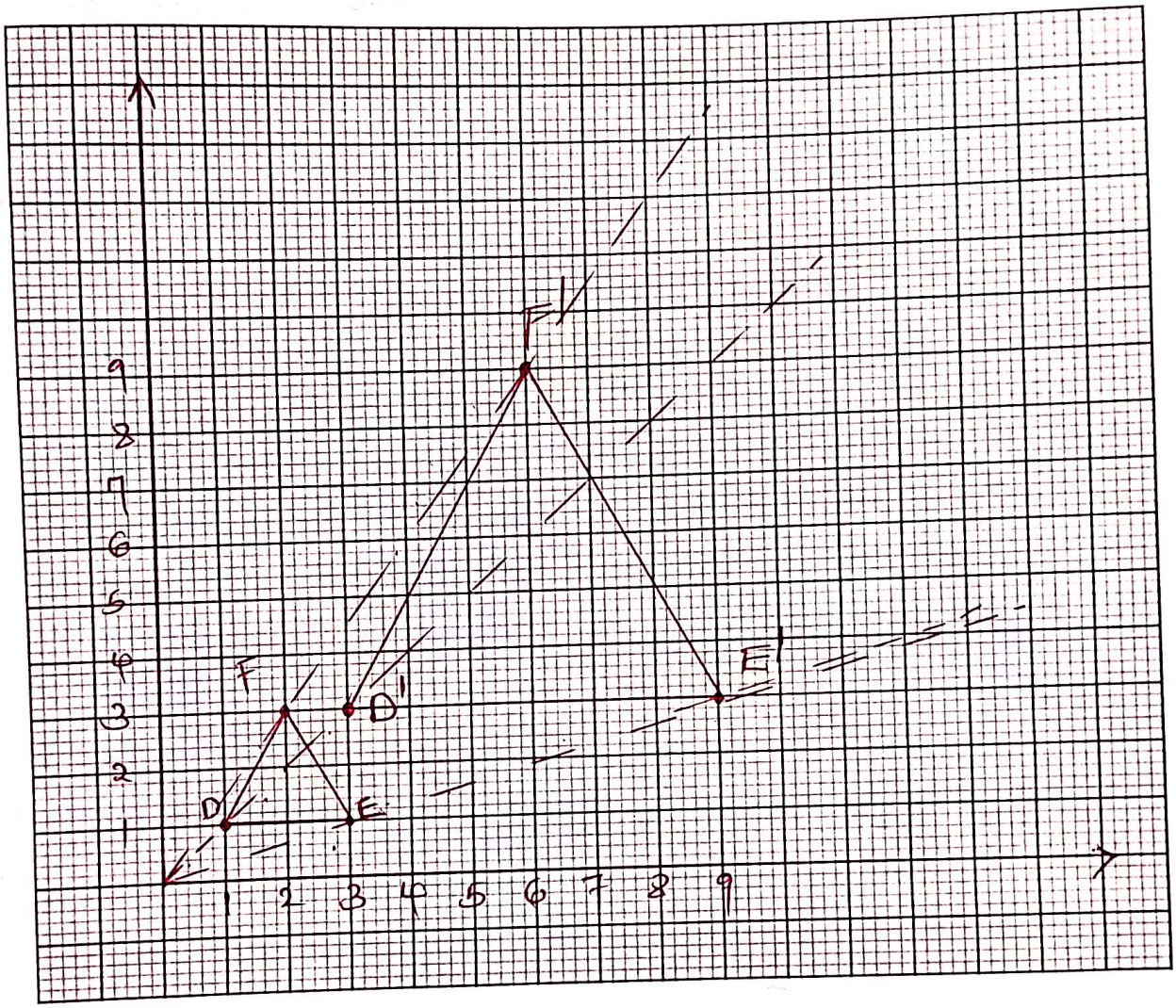
a) Red (1mk) $5+4+3 = 12 \Rightarrow 5/12$

b) Not green (1mk) $\frac{5+3}{12} = 8/12 = 2/3$.

37. Draw a triangle ABC with AB = AC = 6 cm and ∠BAC = 100°. Construct the bisector of angle B. (3mks)



38. Triangle DEF has vertices D(1,1), E(3,1), F(2,3).
It is enlarged by scale factor 2 about the origin.
(a) Plot both triangles on the same Cartesian plane. *(Include grid in Word)* (3 marks)



(b) Write down the coordinates of D', E', F'. (3 marks)

D' (3, 3) E' (9, 3) F' (6, 9).

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