

EDUZEDCO
GRADE 10 MATHEMATICS
End of Term Examination

Total Marks: 84

Name: Adm No: Date:

Section A (36 Marks)

Answer all the questions in this section.

1. Calculate: $(-15) + 8 - (-3) \times 2$ [3 marks]

2. Simplify: $3(2x - 4) + 5x - 2$ [3 marks]

3. A rectangle has length 12 cm and width 8 cm. A square of side 4 cm is cut out from one corner. Find the area of the remaining shape. [3 marks]

4. In a right-angled triangle, the side opposite angle θ is 5 cm and the hypotenuse is 13 cm. Find $\sin \theta$ and $\cos \theta$. [3 marks]

5. Convert 2.5 km into metres. [3 marks]

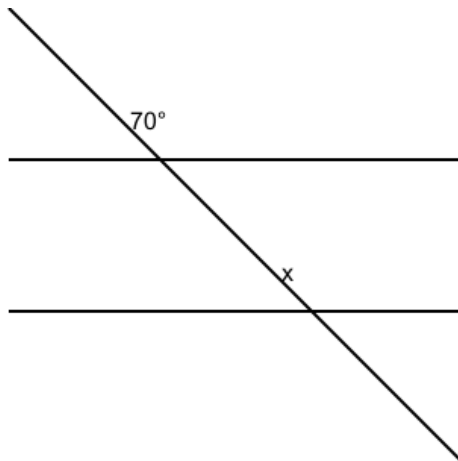
6. Find the mean of the numbers: 4, 8, 6, 5, 7. [3 marks]

7. If vector $a = (3, -2)$ and vector $b = (-1, 4)$, find $a + b$. [3 marks]

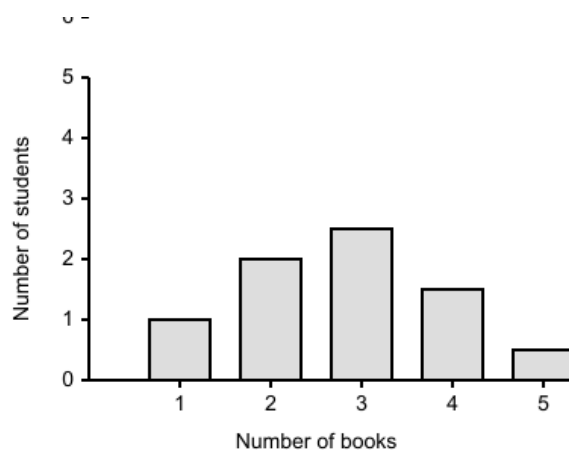
8. Solve for x : $5x - 3 = 2x + 9$ [3 marks]

9. Divide 60 in the ratio 2:3. [3 marks]

10. In the diagram, two parallel lines are cut by a transversal. One angle is 70° . Find the size of the corresponding angle. [3 marks]



11. The bar chart shows the number of books read by students in a week. How many students read 3 books? [3 marks]



12. Find the volume of a rectangular prism with length 5 cm, width 3 cm, and height 4 cm. [3 marks]

Section B (48 Marks)

Answer any four questions in this section.

1. Solve the simultaneous equations: $2x + y = 7$ $3x - y = 8$ [8 marks]
2. A ladder 10 m long leans against a wall. The foot of the ladder is 6 m from the wall. How high up the wall does the ladder reach? [8 marks]
3. A bag contains 5 red balls, 3 blue balls, and 2 green balls. A ball is drawn at random. What is the probability that it is not red? [8 marks]

4. Given vector $v = (6, 8)$. Find its magnitude and the angle it makes with the positive x-axis. [8 marks]

5. A closed cylinder has radius 7 cm and height 10 cm. Find its total surface area. (Use $\pi = 22/7$) [8 marks]

6. In triangle ABC, side $a = 7$ cm, side $b = 9$ cm, and angle $C = 60^\circ$. Use the cosine rule to find side c . Show all steps. [8 marks]

MARKING GUIDE

Question	Expected answer / marking points	Marks
q1_01	-1	3
q1_02	$11x - 14$	3
q1_03	Area = $(12 \times 8) - (4 \times 4) = 96 - 16 = 80 \text{ cm}^2$	3
q1_04	$\sin \theta = 5/13$, $\cos \theta = 12/13$ (using Pythagoras: adjacent = $\sqrt{(13^2 - 5^2)} = 12$)	3
q1_05	2500 m	3
q1_06	6	3
q1_07	(2, 2)	3
q1_08	$x = 4$	3
q1_09	24 and 36	3
q1_10	70°	3
q1_11	5 (assuming bar height indicates 5)	3
q1_12	60 cm^3	3
q2_01	$x = 3$, $y = 1$ (adding: $5x = 15 \Rightarrow x = 3$, then $2(3) + y = 7 \Rightarrow y = 1$)	8
q2_02	8 m (using Pythagoras: height = $\sqrt{(10^2 - 6^2)} = \sqrt{64} = 8$)	8
q2_03	$5/10 = 1/2$ (non-red = $3 + 2 = 5$, total = 10)	8
q2_04	Magnitude = 10, angle = $\arctan(8/6) \approx 53.13^\circ$	8
q2_05	Total surface area = $2\pi r(r+h) = 2 \times (22/7) \times 7 \times (7+10) = 44 \times 17 = 748 \text{ cm}^2$	8
q2_06	$c^2 = a^2 + b^2 - 2ab \cos C = 49 + 81 - 2 \times 7 \times 9 \times 0.5 = 130 - 63 = 67 \Rightarrow c = \sqrt{67} \approx 8.19 \text{ cm}$	8