

MATHS
SAMPLE QUESTION PAPER

Class: IX

Maximum Marks: 80

Time duration: 2hrs

No of pages:3

General Instructions:

Attempt **all** questions in **Section A**.

Attempt any **four** questions in **Section B**.

Maximum marks for each question is indicated in [] against each question.

Give proper steps and working.

Section A (40 Marks)
(Attempt all questions)

Question 1:

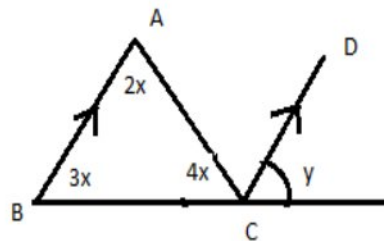
- Find three rational numbers between 11 and 17 [2]
- Rationalize the denominator $\frac{1}{\sqrt{10}}$ [4]
- Find the compound interest on Rs 10500 in 2 years, when the rate of interest for successive years is 7% and 10% respectively. [4]

Question 2:

- The books are sold at Rs 360 and Rs 780, if the first book is sold at 50% profit, second at 35% loss and an overall loss incurred is 5%; find the cost price of the third article. [4]
- Find the value of $\log_3(27)$ [3]
- Find graphically: a) the area of triangle; b) the coordinate of the vertices of the triangle. [3]

Question 3:

- ABCD is a parallelogram, if $AB = 2AD$ and p is the midpoint of CD; prove that $\angle APB = 90^\circ$ [3]
- The sides of a triangle are given by the equation $y - 2 = 0$; $y + 1 = 3(x - 2)$ and $x + 2y = 0$ [4]
- Find the value of $\angle y$ [4]



Question 4:

- a) $a^2+b^2=13, ab=6$ find a) $a+b$ b) $a-b$ c) a^2-b^2 [3]
- b) Find the mean of i) 5, 15, 20, 8 and 12 [4]
ii) 28, 24, 37, 42, 56, 59, 67, 28, 15 and 32
- c) In a quadrilateral ABCD, $AB = CD$ AND $\angle B = \angle C$ prove that i) $AB \parallel DC$ ii) AD is parallel to BC [3]

Section B (40 Marks)
(Attempt any 4 questions)

Question 5:

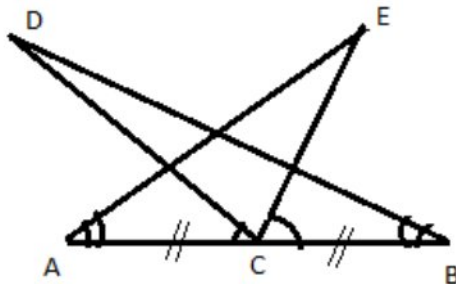
- a) Solve [4]
 $217x+131y=913$
 $131x+217y=827$
- b) If the difference between an interior angle of regular polygon of $(n+1)$ sides and an interior angle of regular polygon of n sides is 40° ; find the value of n [3]
- c) Prove that the bisector of the base angles of an isosceles triangle is equal. [3]

Question 6:

- a) D, E and F are the mid points of the sides AB, BC, CA respectively of $\triangle ABC$. AE meets DF at O. P and Q are the mid points of OB and OC respectively. Prove that DPQF is a parallelogram. [4]
- b) In how many years will Rs 8500 amount to 10000 at 8% compound interest [3]
- c) Define surd, with examples [3]

Question 7:

- a) Use the following information given in the figure to prove that $\triangle DBC = \triangle EAC$, $DC = EC$. [5]



- b) Construct an isosceles triangle ABC when base $BC = 6\text{ cm}$, and side $AB = 7.2\text{ cm}$. [5]

Question 8:

- a) Plot the graph of the line $y+4=0$ [3]
- b) The diameter of a right circular cylinder increase by 50% and its height decreases by 40% find the percentage change in i) curved surface area ii) volume [4]
- c) In trapezium ABCD, AB is parallel to DC; P and Q are the mid points of AD and BC respectively. BP produced meets CD produced at point E. prove that: [3]

- (i) point P bisects BE
- (ii) PQ is parallel to AB.

Question 9:

- a) IN a ΔABC ,angle B is obtuse .D and E are mid points of AB and BC respectively. F is a point on side AC such that EF is parallel to AB. show that BEFD is a parallelogram [3]
- b) State the law of indices [4]
- c) Evaluate : $4 \cdot 2^3 \cdot 9^{-3/4} \div 4^2 + 9$ [3]