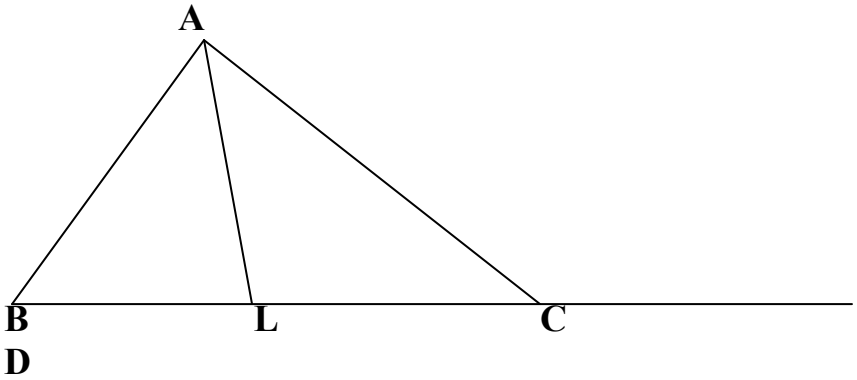
SAMPLE PAPER 3
MATHS
IX
SECTION A 3 MARKS EACH

1. **The marked price of the fan is 800/-. It is sold at the discount of 10%. He further allowed the discount of 5% more. Find the selling price?**
2. **prove that $a^3 + b^3 + c^3 - 3abc = 1/2(a + b + c)[(a - b)^2 + (b - c)^2 + (c - a)^2)]$**
3. **If sin A = 3/5, find all the other ratios.**
4. **A playground is in the shape of the rectangle. It has two semicircles on the smaller sides as the diameters. If the sides of the rectangle are 36 m and 24.5 m find the area of the playground?**
5. **In the figure below, AL is the angle bisector of, < BAC prove that < ABC + < ACD = 2 < ALC.**



6. **Divide 195150\ between A and B in such a way that the amount A receives in 2 years is same as the amount B receives in 4 years at the rate 4%.**
7. **The mean of 100 students was found to be 40. Later it was found that 53 were misread as 83. Compute the correct mean.**
8. **Find the median of 25, 27, 19, 29, 21, 23, 25, 30, 28, and 20?**
9. **Construct a triangle whose perimeter is 10 cm and base angles are 60^o and 45^o.**
10. **Find the mean proportional between 32 and 8?**

SECTION B 4 MARKS EACH

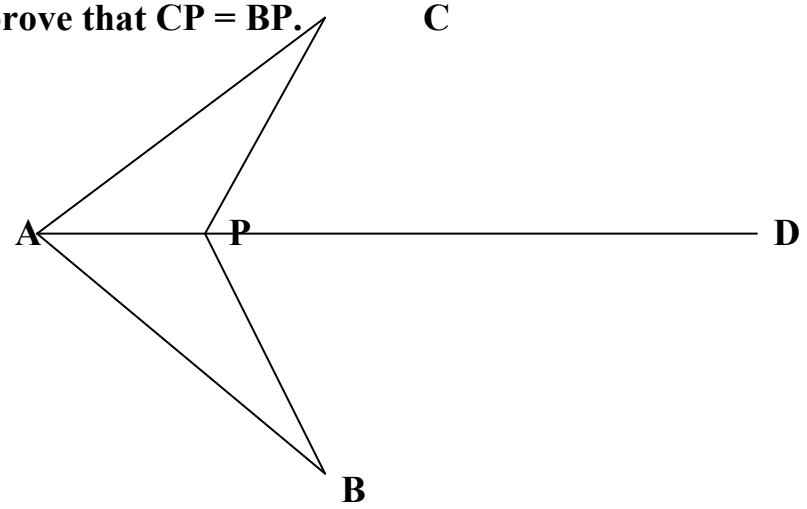
11. **find the value of a and b**

$\sqrt{7} - 1 \qquad \sqrt{7} + 1$

$$\frac{}{\sqrt{7}+1} - \frac{}{\sqrt{7}-1} = a + b\sqrt{7}$$

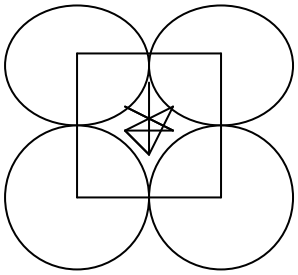
12. If the selling 20 articles at the cost price of 23 articles. Find the gain or the loss percent?

13. In the figure below, < CPD = < BPD AD is the angle bisector of < BAC prove that CP = BP.



14. Factorize $12x^2 - 7x + 1$.

15. In the figure below find the area of the shaded region? The radius of each circle is 7 cm.



16. Read the page of the pass below.

MONTH	DEPOSIT	WITHDRAWL	BALANCE
July 14	4000		4000
Aug 3	5000		9000
Aug 4		3000	6000
Aug 23		2300	------
Nov 13	5500		------
Nov 15		--------	9000
Dec 2	6000		15000

Dec 23 **2400** **-------**
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Fill in the blanks and find the interest at the rate of 6%

17.if x/a = y/b then show that

$$\frac{x^2 + a^2}{x + a} + \frac{y^2 + b^2}{y + b} = \frac{(x + y)^2 + (a + b)^2}{[x + y]\,[a + b]}$$

18.If PMO is the right angled triangle < M = 90^o, PM = 3 cm, OP = 6 cm, find all the parts?

19.If a is subtracted form each of the deviations $x_1, x_2, x_3, \ldots x_n$ then prove that the new mean = old mean – a.

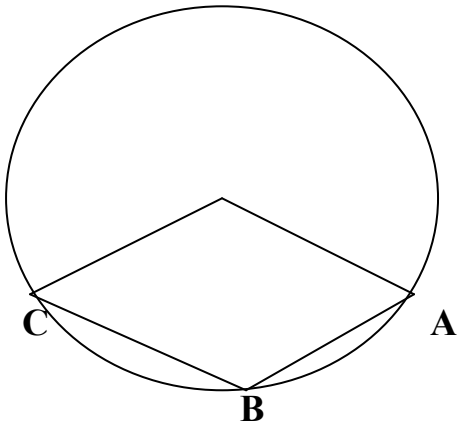
20.If the median of the data is 63, find x?

29, 32, 48, 50, x, x + 2, 72, 78, 84, 95.

SECTION C 6 MARKS EACH

21.if $x = \frac{6pq}{p + q}$ **then find** $\frac{x + 3p}{x - 3p} + \frac{x + 3q}{x - 3q}$

22.In the figure OABC is a rhombus and O is the centre of the circle. If the radius is 10 cm, find the area of rhombus



23.Show that the medians of a triangle pass through the same point and divides each in the ratio of 2 : 1.

24.Show that if the line passing through the mid point of the one side of the triangle and parallel to the second side bisects the third side.

25.in the figure below, if AB is the shortest side and CD is the longest side then prove that < A > <C and < B > <D