MATHS
IX
SECTION A 3 MARKS EACH

1. In an election between the two candidates A and B, A got 60% of the valid votes. If 15% of the total 500000 votes were declared invalid, find the number of the votes polled for B?
2. The lateral surface area of the right equilateral prism is 120 cm^2 and the volume is 40   3. Find the whole surface area?
3. factorize $a^3 - b^3 + 1 + 3ab$
4. In the triangle PQR, right angled at Q, if PR = 10 and PQ = 5, then find the remaining parts?
5. If 3a + 8b:3c + 8d :: 3a – 8b:3c – 8d, then show that a:b :: c:d.
6. If two parallel lines are intersected by a transversal then prove the angle bisectors of all the interior angles form the rectangle.
7. A retailer buys the cooler for 1200/- and the overhead expenses were 40/-. If he sells for 1550/-, find his profit percent?
8. factorize:
    a. $x^2 - y^2 - x - y$

    b. $\sqrt{3}\ x^2 + 11x + 6\sqrt{3}$

9. In the triangle prove that the sum of all the angles is 180.
10. If a:b :: c:d then show that 5a + 7b:5a – 7b :: 5c + 7d:5c – 7d.
11.

SECTION B 4 MARKS EACH

12. List price of the cooler is 2563/-. The rate of the sales tax is 10%. The person asks the shopkeeper to allow him that much of the discount so that he pays 2563/- after sales tax. Find the discount?
13. Read the page of pass book below.

MONTH	DEPOSIT	WITHDRAWL	BALANCE
Jan 1			2000
Feb 3	1550		3550
Feb 10	700		4250
June 17		1000	3250
Nov 5	2525		5775
Dec 6		2500	3275

If account is closed on dec 29, find amount he gels if rate is 4.5%?

14. A sum of money doubles itself in 15 years at certain rate. In how many years will it become 8 times at the same rate?

15. In the triangle ABC right angled at C, if tan A = 1\3, show that
    Sin A cos B + cos A sin B = 1

16. Prove that the two triangles are congruent if any two angles and the included side one triangle are equal to the two angles and the included side of the other triangle.

17. Draw the quadrilateral ABCD such that AB = 3.6 cm, BC = 7.7 cm, CD = 6.8 cm, DA = 5.1 cm and AC = 8.5 cm. construct a triangle equal in area to the given quadrilateral.

18. The price of the commodity was increased by 20%. Find the reduction in the consumption so that there is no increase in the expenditure?

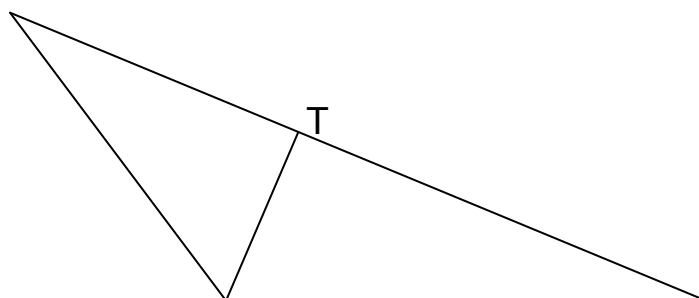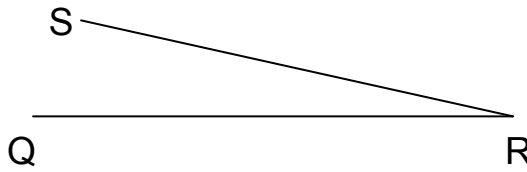19. In the figure below DP = BQ, prove that APCQ is a parallelogram.
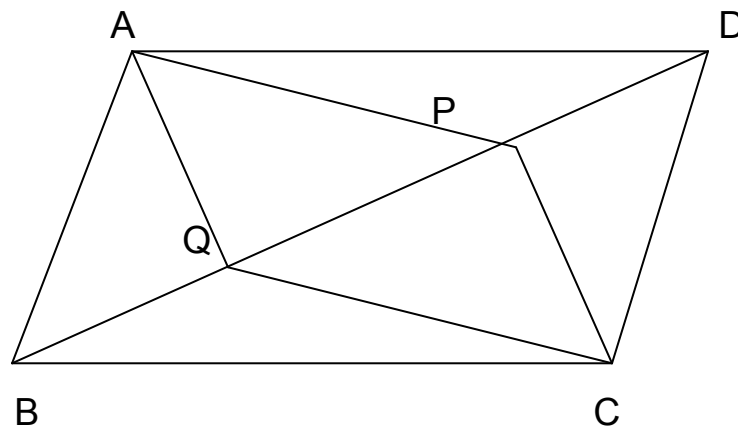
20. factorize
$$x^2 + \frac{12}{35} + \frac{1}{35}$$

21. if tan A = 12/5 prove that $\sin^2 A + \cos^2 A = 1$

SECTION C 6 MARKS EACH

22. If two medians of the triangle are equal then prove that it is an isosceles triangle.

23.   in the figure below rove that SQ + SR < PQ + PR
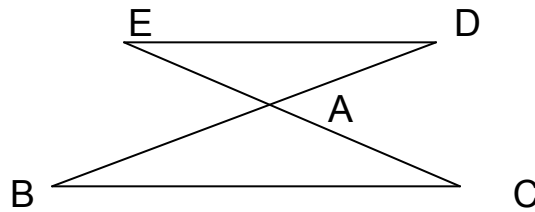
P

S

Q   R

24.   In the triangle prove that the exterior angle is the sum of the
       opposite interior angles.

25.   In the figure below, BA = DA, CA = EA, prove that BC \\ ED.

E   D

A

B   C

26.   In the figure below BP and DQ are the angle bisectors.

$$< P + < Q = \frac{1}{2} (< ABC + < ADC)$$

A   B   Q

P   D   C