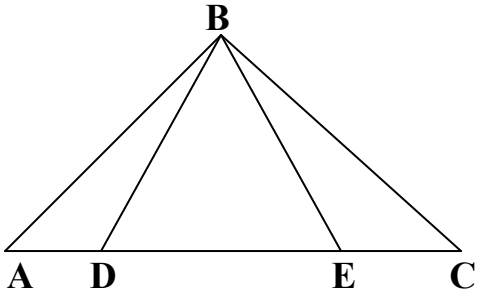
MATHS
IX
SECTION A 3 MARKS EACH

1. **Express in the terms of p/q 18.4848…..**
2. **Damini sells an article for the loss of 12 ½ %. Had she sold it for 51/- more, she would have made the profit of 6%. Find the CP?]**
3. **factorize**
   $x^4 + x^2 + 1$
4. **The sides of the triangle are in the ratio 25 : 17 : 12 . if the perimeter is 84 cm, find the area?**
5. **In the figure AB = BC AD = EC, then prove that BD = BE.**

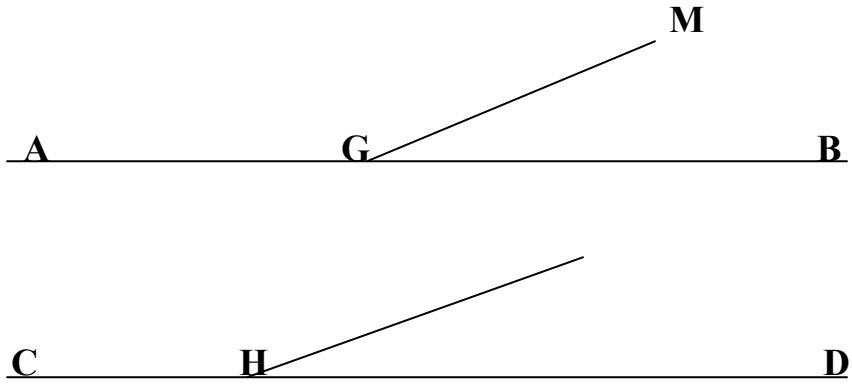


6. **The value of a flat is 500000/- depreciating at the rate of 10% per annum. In how many years it will become 364560/-?**
7. **Two numbers in ration 3:4. When 8 is subtracted from each the ratio becomes 2:3. Find the numbers?**
8. **If sec = 5/4, then prove that**

$$\frac{\tan}{1 + \tan^2} = \frac{\sin}{\sec}$$

9. **In the figure if AB \\ CD and GB and HL are the internal bisectors then prove that GM \\ HL.**

E



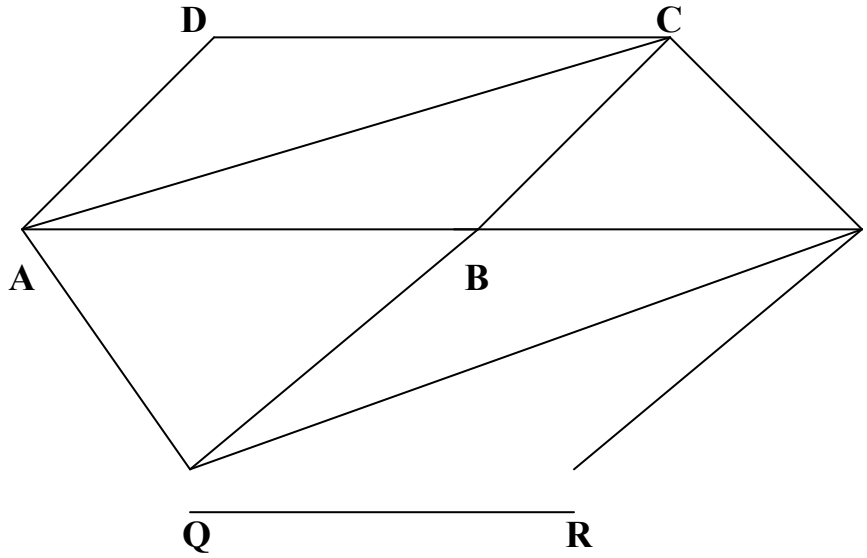
F

10. Find the mean and the median of the first nine natural numbers?

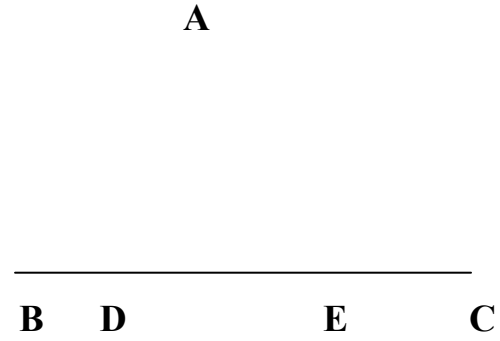
SECTION B 4 MARKS EACH

11. Asha goes to buy a box listed at 981/-. The rate of sales tax is 9%. She asks the shopkeeper to give her the discount in such a manner that after the sales tax the box would cost her 981/-. Find the discount?

12. In the figure ABCD and BQRP are the parallelograms. Show that Area ABCD = area BQRP



13. In the figure AD = AE, BD = EC, then prove that AB = AC.



14.verify $\dfrac{\tan 60 - \tan 30}{1 + \tan 60 \tan 30} = \tan 30$

15.if a is divided by the each deviation $x_1, x_2, x_3, \ldots\ldots x_n$ then prove that the new mean is old mean divided by a.

16.Read he page of the pass book below.

MONTH	DEPOSIT	WITHDRAWL	BALANCE
Jan 1			2100
Jan 7	1000		3100
Feb. 1	500		3600
Feb 15		2000	1600
March 15	2000		3600
March 20		1000	2600
June 12	3000		5600
June 28		1000	4600
Oct15		3000	1600
Nov 5	1500		3100
Dec 10	500		3600
Dec 20		1000	2600

Calculate he interest if rate is 4.5%

17.find x $\dfrac{x^3 + 3x}{3x^2 + 1} = \dfrac{341}{91}$

18.in the figure below PQ = PR prove that PS > PQ

P

S Q R

19.Prove that the hypotenuse in a right triangle is the longest side.

20.if sec A = 5/4, verify that

$$\frac{\tan}{} = \frac{\sin}{}$$

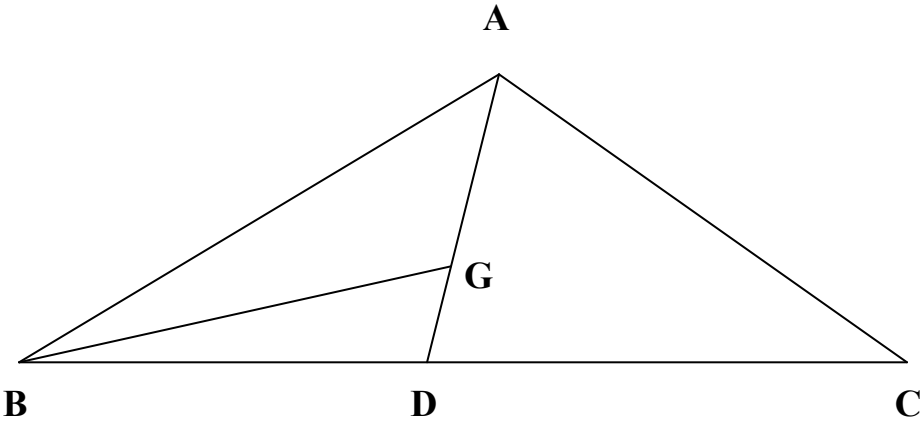
$1 + \tan^2$ sec

SECTION C 6 MARKS EACH

21. The length of the cube is 24 cm. it is cut by the plane into a pyramid such that the three co terminal edge remains half of the original length. Find the volume?

22. In the figure G is the centroid prove that

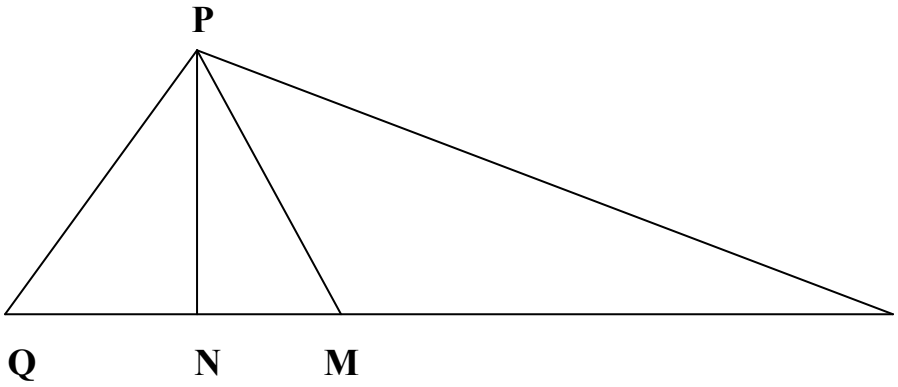
Area of triangle GAB = 1\3 area of ABC



23. Find the area of the quadrilateral in which the diagonal AC is 15 cm and the lengths of the perpendiculars to the diagonals are 3 and 5 cm?

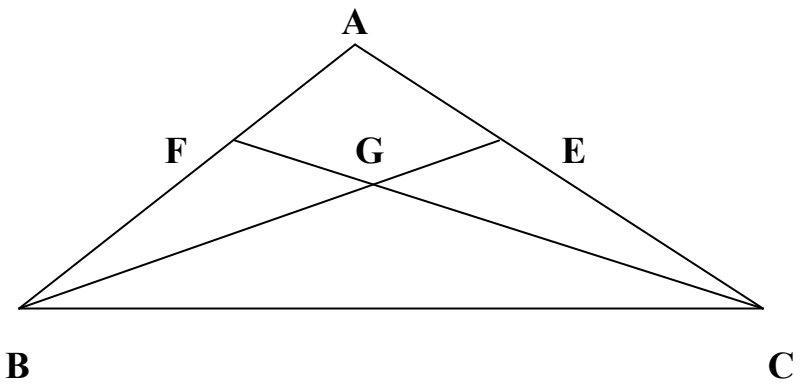
24. In the figure PM is the bisector of the < QPR. PN is perpendicular to QR. Prove that

$$< MPN = \frac{1}{2}(< Q - < R)$$



25. In the figure BE, CF are the medians. Prove that

Area of GBC = area AFGE.


A
F
G
E
B
C