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CLASS VII   Mathematics

1. Solve using distributive property: $(-33) \times 102 + (-33) \times (-2)$

2. A shopkeeper earns a profit of Rs. 2 by selling a pen and incurs a loss of 50p per pencil and loss of 15p per eraser while selling pencils and erasers of old stock. On a particular day he earns a profit of Rs.10. If he sold 10 pens and the number of pencils and erasers he sold are in the ratio 7: 10. Find the number of pencils and erasers he sold on that day.

3. I read $\frac{4}{9}$ of a book on one day and $\frac{3}{5}$ of the remaining next day. If 100 pages of the book were still left unread, how many pages did the book contain?

4. A drum of petrol is $\frac{3}{4}$ full. When 30 litres of oil are drawn from it, it is $\frac{7}{12}$ full. Find the capacity of the drum.

5. A father had a large field of dimensions 1396.5m by 272m. Find the area of the field. He left $\frac{1}{6}$ of this area to make a playground for the children of the locality. Find the area of the playground.

6. Two persons start moving from two points A and B in opposite directions towards each other. One person start moving from A at the speed of 4 km/hr and meets the other person coming from B after 6 hours. If the distance between A and B is 42 km, find the speed of the other person.

7. There are some benches in a classroom. If 4 students sit on each bench then 3 benches remains empty and if 3 students sit on each bench then 3 students remain standing. Find the number of students in the class.

8. On his 13th birthday , a boy decided to distribute blankets to the poor people instead of giving party to his friends. Half of the blankets he distributed in an old age home, three fourth of the remaining in an orphanage and rest 20 were distributed to the road side beggars. Find the number of blankets he had.

9. A purse contains Rs. 550 in notes of denominations of Rs.10 and Rs. 20. If the number of Rs. 50 notes is one less than that of Rs.10 notes, then find the number of Rs.50 notes.

10. The cost of 2 tables and 5 chairs is Rs.2300. If a table costs Rs. 30 more than a chair, find the price of each table and chair.

11. Find the measure of $\angle Q$, $\angle PRQ$ and $\angle PRT$ if $\angle P = 72°$, $\angle TRS = 55°$ and PQ ||TR
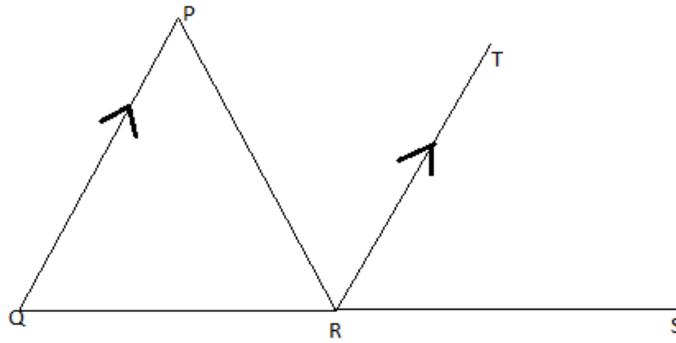
12. If ∠ABC =135°, ∠BCE = 110° and AB ‖CD‖ EF find ∠BCD , ∠DCE and ∠CEF
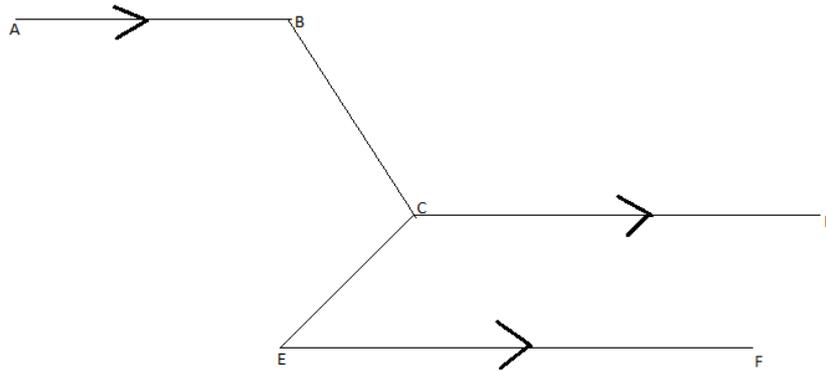
13. If ∠CHI =110°, AB ‖CD‖ HI and GF ‖ BC ‖ DE then find ∠ABC , ∠CDE, ∠BCF and ∠CFG
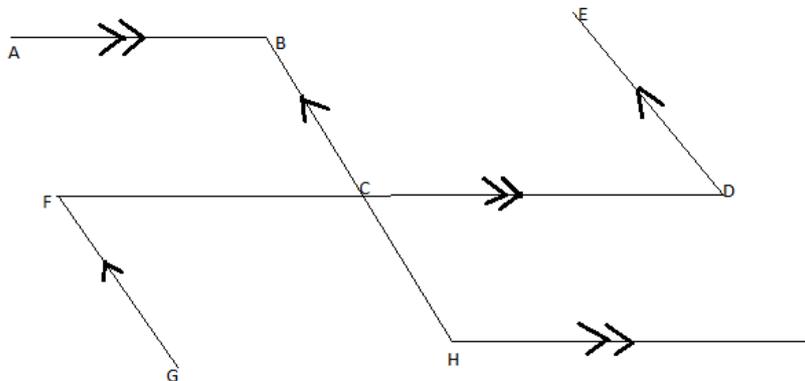
14. If two angles are supplementary angles and one angle is 30° less than twice the other, find the angles.

15. Two complementary angles are (x + 38) ° and (3x – 58) ° , find x.

16. In ΔDEF, DM and EN are two medians. Prove that 3(DF + EF) > 2(DM + EN).

17. In a ΔABC, medians AD, BE and CF intersect each other at point G. Prove that 3(AB + BC + CA) > 2 (AD + BE + CF).

18. Find x if AB = 10cm, AD = 8 cm, AC = 17cm and ∠ADB = 90°
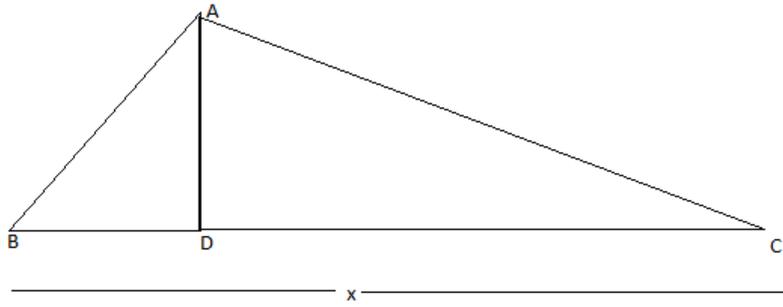
19. The side of a rhombus is 5cm. If the length of one diagonal of the rhombus is 8 cm, then find the length of the other diagonal.

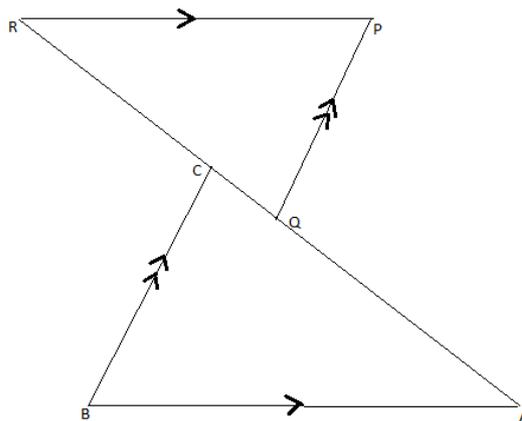20. Find ∠ACB and ∠ADC in the given figure, if ∠ BAC =90° and AB = AC = CD :
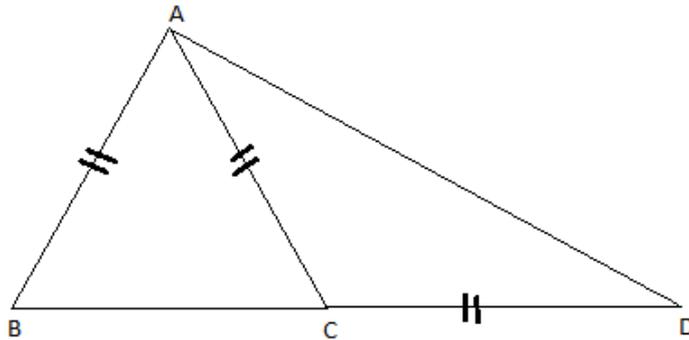
21. If two medians of a triangle are equal then prove that it is an isosceles triangle.

22. If all the three altitudes of a triangle are equal, then prove that it is an equilateral triangle.

23. In the adjoining figure, if BA ∥ RP, QP∥ BC and AQ = CR, then prove that Δ ABC ≅ ΔRPQ
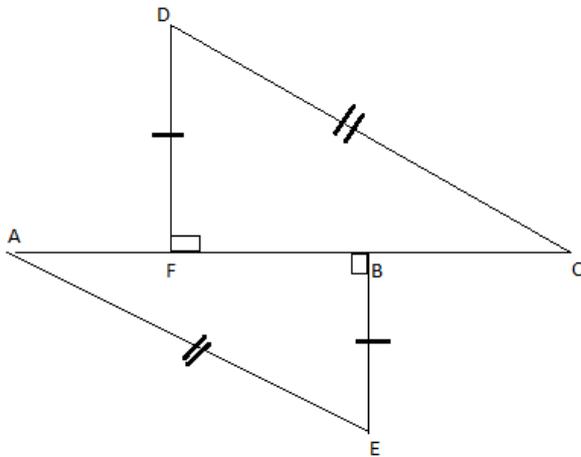

24. In the adjoining figure, OA bisects ∠A and ∠ABO =∠ OCA. Prove that OB = OC.
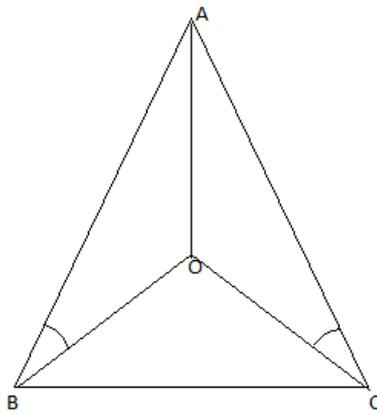
25. In the figure given below, prove that

i) AB = FC   ii)AF = BC

26. The mean of 6 observations is 17.5. If five of them are 14, 9, 23, 25 and 10, find the sixth observation.

27. The mean height of 10 students is 151.8cm. Two more students of heights 157.6cm and 154.4cm join the group. What is the new mean height?

28. The following observations have been arranged in ascending order. If the median of the data is 13, find the value of x:

3, 6, 7, 10, x, x+4, 19, 20, 25, 28

29. Find the probability of getting 53 Sundays in a leap year.

30. In a game, a fair coin is tossed. A person is paid Rs.5 if he gets head and he pays Rs.2 if he gets tail. Find the probability of winning Rs.5.