SINE RULE, COSINE RULE

1. In a ΔABC, $\angle B=90°, \angle C=60°$ then find the ratio of sides

A) 1 : 2 : 3 B) $1:\sqrt{2}:\sqrt{3}$

C) $1:2:\sqrt{3}$ D) $1:1:\sqrt{3}$

2. In a ΔABC, $\angle B=60, \angle C=45°, AB=12$, then find the area of triangle

A) $18(3+\sqrt{3})$ B) $18(\sqrt{3}+1)$

C) $6(3+\sqrt{3})$ D) $18\sqrt{3}$

3. In a triangles, AD divides BC in the ratio 1 : 3, $\angle B=60°, \angle C=45°$ then find $\frac{\sin\angle BAD}{\sin\angle CAD}$

A) $\frac{1}{6}$ B) $\sqrt{6}$ C) $\frac{1}{\sqrt{6}}$ D) $\frac{1}{\sqrt{3}}$

4. In a ΔABC, $\angle A=120°, AB=6, AC=8$ then BC = ?

A) $\sqrt{37}$ B) $2\sqrt{37}$ C) $\sqrt{10}$ D) 10

5. Area of ΔABC is 80 cm², AC = 20, BC = 10 then AB =?

A) 26 B) $\sqrt{260}$ C) $2\sqrt{70}$ D) 15

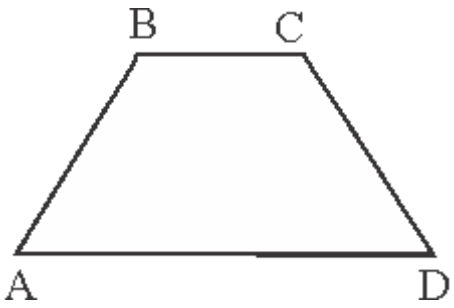
6. In ΔABC, AB = AC = 15, D is a point on BC such that CD = 3, AD = 12 then BD =?

A) 36 B) 27 C) 37 D) 30

7. In a triangle ABC, $\angle B=30°$ and $\angle C=45°$. If BC = 50 cm then find the length of AB?

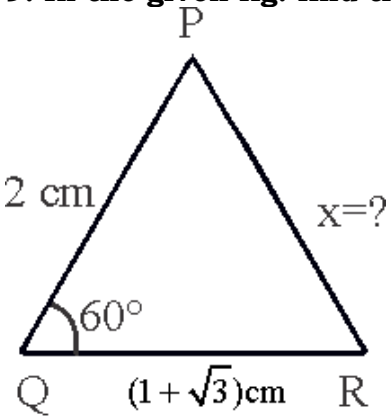
A) $\frac{50}{\sqrt{3}+1}$ B) $50(\sqrt{3}-1)$ C) $\frac{100}{(\sqrt{3}-1)}$ D) $100(\sqrt{3}-1)$

8. ABCD is a quadrilateral such that AB = 5 cm, CD = 7 cm, BC = 17 cm and AD = 25 cm also $\angle ABC+\angle BCD=270°$. Find the area of quadrilateral ABCD?



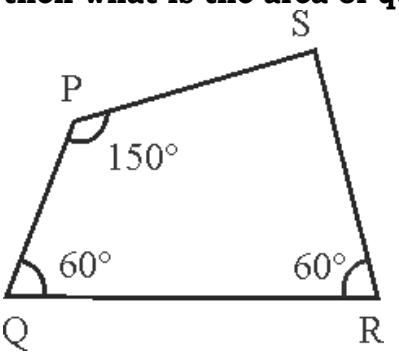
A) 80 **B) 90** **C) 105** **D) 100**

9. In the given fig. find the value of PR?



A) $2\sqrt{3}$ **cm** **B)** $\sqrt{6}$ **cm** **C)** $4(\sqrt{3}-1)$ **cm** **D) 4 cm**

10. In the given figure PQRS is a quadrilateral if QR = 18 cm, PS = 9 cm then what is the area of quadrilateral PQRS?

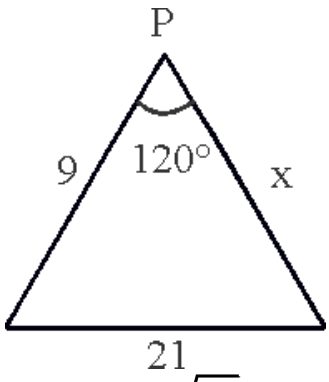


A) $\frac{45\sqrt{3}}{2}$ **B)** $\frac{135\sqrt{3}}{2}$ **C)** $45\sqrt{3}$ **D)** $90\sqrt{3}$

11. If two sides of a triangle are 15cm, 20cm and area of triangle is 150cm² then find the perimeter of triangle?

A) 60cm **B) 50cm** **C) 65cm** **D) 70cm**

12. In the given fig.find the area?



A) $\frac{135\sqrt{3}}{4}$ B) $\frac{145\sqrt{3}}{4}$ C) $\frac{120\sqrt{3}}{7}$ D) $\frac{145\sqrt{5}}{7}$

13. The side AB of triangle is 80 cm long, whose perimeter is 170 cm. If angle ABC is equal to 60°, then smallest side of the triangle is ..... cm?

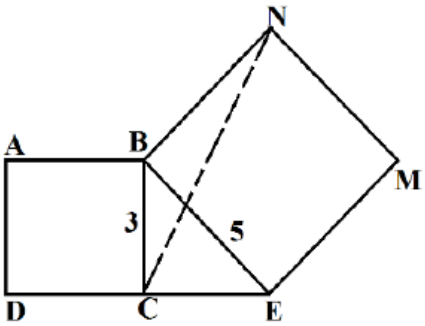
A) 15 B) 25 C) 17 D) 21

14. In a triangle the length of the two larger sides are 15 cm and 13 cm the angles of triangle are in an A.P. the length of the remaining side can be

A) 8 cm B) 4 cm

C) Either 8cm or 7 cm D) 6 cm

15. In the given fig., there is a square of 3 cm. If an another square of 5 cm with side BE is formed. In triangle BCE, C is right angle. Find the length of CN ?



A) $\sqrt{56}$ cm B) $\sqrt{57}$ cm

C) $\sqrt{58}$ cm D) $\sqrt{59}$ cm

16. In ΔABC, $AB = AC$ and D is a point on BC. If BD = 5 cm, AB = 12 cm and AD = 8 cm then the length of CD is

A) 14.8 B) 14 C) 16 D) 16.2

17. In a ΔABC, AB = AC = 12 and D is a point on BC such that BD = 11, CD = 4 then AD = ?

A) 10 B) 12 C) 8 D) 9

18. In ΔABC, AB = 10, AC = 18 and AD is angle bisector. If area of $\Delta ABD = 25$, then find the area of ΔACD

A) 45 B) 60 C) 72 D) 36

19. In a ΔABC, the exterior angle bisector of $\angle A$ meet BC at D, AB = 20, AC = 15 and CD = 9 then BC =?

A) 12 B) 3 C) 5 D) 6

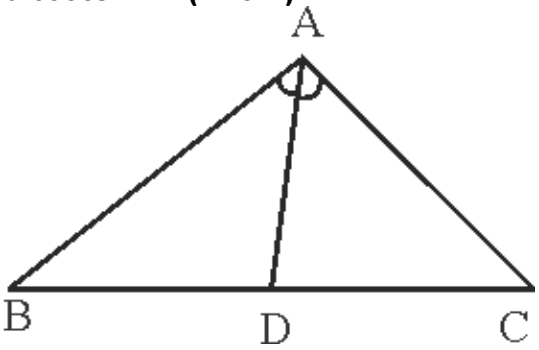
20. The bisector of $\angle A$ in ΔABC, meets BC at D if AB = 15 cm, AC = 13 cm and BC = 14 cm then DC =?

A) 8.5 cm B) 8 cm C) 6.5 cm D) 7.5 cm

21. In a ΔABC, with sides 5 cm, 6 cm and 7 cm, the angle bisector of the largest angle divides the opposite side into the two segments what is the length of the shorter segment ?

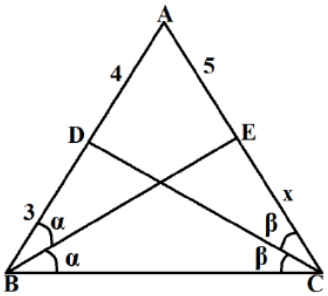
A) $\frac{42}{11}$ B) $\frac{35}{11}$ C) $\frac{30}{11}$ D) $\frac{18}{11}$

22. In the given $\Delta ABC, AB = 16\,cm, AC = 12\,cm$ and BC = 21 cm then find the length of angle bisector AD (in cm) ?



A) $\sqrt{78}$ B) $\sqrt{84}$ C) $\sqrt{93}$ D) $\sqrt{80}$

23. Find the value of x?



A) 75/13 B) 60/11 C) 48/7 D) 67/12

24. In a ΔABC, CD is angle bisector of $\angle ACB$ which meets AB at D if AD = 5, BD = 4 cm, and $\angle B=90^\circ$, then CD =?

A) $3\sqrt{10}$ B) $5\sqrt{10}$ C) $6\sqrt{10}$ D) $4\sqrt{10}$

25. In ΔABC, AB = 10, AC = 13 and $\angle A=120^\circ$ then what is the area of triangle?

A) $\frac{52\sqrt{3}}{2}$ B) $\frac{39\sqrt{3}}{2}$ C) $\frac{65\sqrt{3}}{2}$ D) $65\sqrt{3}$

26. In $\Delta ABC, \angle A=60^\circ$, AB = 3 and AC = 4 then find the length of angle bisectors AD

A) $\frac{12\sqrt{3}}{7}$ B) $\frac{9\sqrt{3}}{7}$ C) $12\sqrt{3}$ D) $15\sqrt{3}$

27. In $\Delta PQR, \angle PQR=120^\circ$, S is a point on PR such that $\angle PQS=75^\circ$ if PQ = 16 cm and QR = 15 cm then QS =?

A) $\frac{120\sqrt{6}}{23+8\sqrt{3}}$ B) $\frac{124\sqrt{6}}{27+11\sqrt{3}}$

C) $\frac{240\sqrt{2}}{31+8\sqrt{2}}$ D) $\frac{120\sqrt{3}}{15.5+7\sqrt{3}}$

28. If three sides of a triangle are 15 cm, 8cm and x cm for what value of x area of triangle is maximum?

A) 16 B) 17 C) 18 D) 20

29. In ΔABC, D and E are the points on AB and AC respectively AD : DB = 3 : 2, AE : EC = 5 : 7, then find the ratio of area of ΔADE to area of ΔABC?

A) 1 : 3 B) 1 : 2 C) 2 : 5 D) 1 : 4

30. In ΔABC, D, E and F are the points on BC, AC and AB respectively AF : BF = 3 : 4, BD : DC = 1 : 2 and AE : EC = 2 : 3 if $\Delta DEF=100CM^2$ then ΔABC?

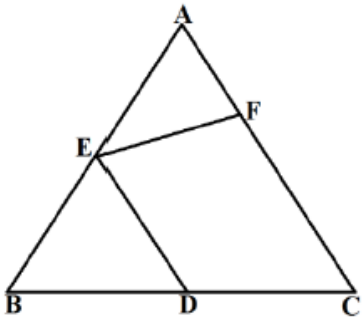
A) $105\,cm^2$ B) $210\,cm^2$

C) $315\,cm^2$ D) $420\,cm^2$

31. ΔABC and ΔDBC are on the same base BC but on opposite sides of it. AD and BCintersect each other at 'O' if AO = a cm, DO = b cm and the area of $\Delta ABC = x\,cm^2$ then $\Delta DBC = ?$

A) $\frac{ab}{2}x$ B) $\frac{a}{b}x$ C) $\frac{a+b}{2}x$ D) $\frac{b}{a}x$

32. In the given AE : EB = 3 : 2, AF : FC = 1 : 5 and BD : DC = 4 : 3, then find ratio of area of $\square$ EFCD to area of triangle ABC ?



CHANDAN LOGICS
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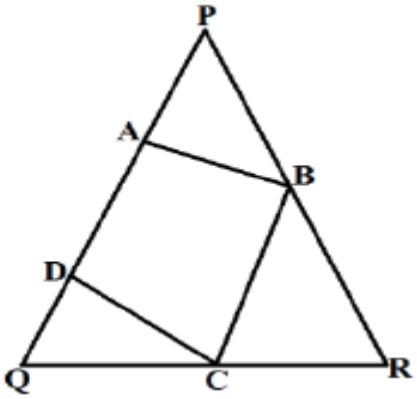
A) 43 : 72 B) 54 : 79 C) 47 : 70 D) 19 : 35

33. In the given figure PQR is a triangle and quadrilateral ABCD is inscribed in it. QD = 2 cm, QC = 5 cm, CR = 3 cm, BR = 4 cm, PB = 6 cm, PA = 5 cm and AD = 3 cm.What is the area (in cm^2) of the quadrilateral ABCD ?



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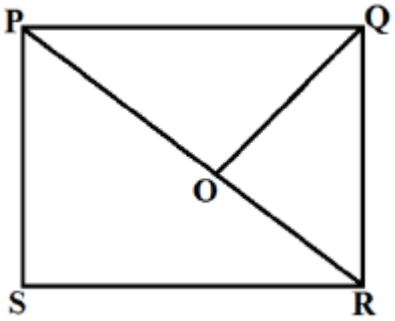
A) $\frac{(23\sqrt{21})}{4}$ B) $\frac{(15\sqrt{21})}{4}$

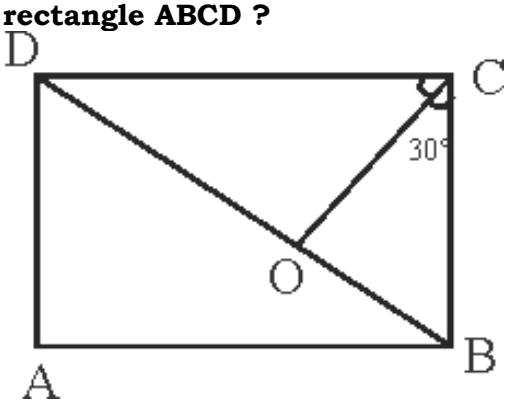
C) $\frac{(17\sqrt{21})}{5}$ D) $\frac{(23\sqrt{21})}{5}$

34. In the given figure, PQRS is a square of sides 8 cm. $\angle PQO=60^\circ$. What is the area (in cm²) of the triangle POQ ?



A) $32\sqrt{3}$ B) $24(\sqrt{3}-1)$ C) $48(\sqrt{3}-1)$ D) $16(3-\sqrt{3})$

35. A rectangle ABCD of area 192 cm² is shown in fig.O is any point on diagonal BD such that DO : OB $=4:\sqrt{3}$ and $\angle OCB=30^\circ$ find perimeter and diagonal of rectangle ABCD ?



A) 56 cm, 20 cm B) 42 cm, 15 cm
C) 56 cm, 25 cm D) 70 cm, 30 cm

36. In a triangle PQR, S and T are the points on PQ and PR respectively, ST is perpendicular to PR, if area of triangle PQR is 320 cm², PR = 28 cm, QS : PS = 9 : 7, PT : TR = 2 : 5 then find the length of ST ?

A) 8 cm B) 10 cm C) 12 cm D) 16 cm

37. In ΔABC, D, E and F are the points on AB, BC and AC respectively such that AD :

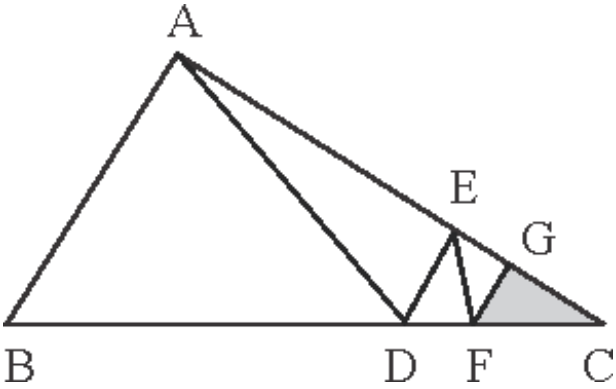
DB = 2 : 3, BE : EC = 4 : 5 and AF : FC = 1 : 2 then find the ratio of area of $\square$ DECF to area of ΔABC,

A) 2 : 5 B) 3 : 5 C) 5 : 9 D) 1 : 2

38. In ΔABC, D is a point on BC and E is a point on AD such that AE : ED = 2 : 3 and BD : BC = 3 : 7, then find the ratio of area of ΔABE to area of ΔADC,

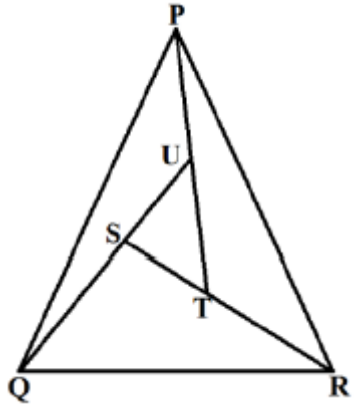
A) 6 : 16 B) 6 : 11 C) 3 : 8 D) 3 : 10

39. In the given figure BD : DF : FC = 7 : 3 : 2,
AE : EC = 5 : 4, FG is angle bisector of $\angle EFC$ such that FC : FE = 1 : 2 if area of $\Delta ABC = 1620\ cm^2$, then find area of ΔFGC,



A) $60\ cm^2$ B) $40\ cm^2$ C) $45\ cm^2$ D) $48\ cm^2$

40. In the given figure in triangle STU,
ST=8cm, TU=9cm and SU=12cm. QU=24cm, SR=32cm and PT=27cm. What is the ratio of the area of triangle PQU and area of triangle PTR?



A) 1 : 1 B) 2 : 3 C) 4 : 9 D) 9 : 20