INCENTER

1. In a triangle ABC, 'I' is the incenter, $\angle BIC = 111°$, then $\angle A = ?$

A) 52° B) 32° C) 42° D) 44°

2. The perimeter of a triangle is 35 cm and Inradius is 4cm then the area of triangle is?

A) $45\,cm^2$ B) $70\,cm^2$ C) $60\,cm^2$ D) $35\,cm^2$

3. In a triangle ABC, I is a point which is equidistant from all sides of triangle if $\angle B = 56°$, then find $\angle AIB + \angle BIC = ?$

A) 242 B) 214 C) 248 D) 236

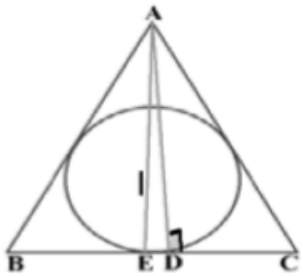
4. The area of a triangle is 15 sq.cm and the radius of its incircle is 3 cm. Its perimeter is equal to?

A) 12 cm B) 20 cm C) 5 cm D) 10 cm

5. It is given that the area of a triangle is A. The values of its perimeter, inradius, circumradius and the average of the lengths of the medians are respectively. p, r, R and d. The ratio A : p is equal to?

A) $(R+r)^2 : d$ B) r : 2 C) r : 1 D) $(R-r)^2 : r$

6. In the given figure $\angle EAD = 12°, \angle ACB = 65°$ then find $\angle ABC = ?$



A) 53° B) 38° C) 89° D) 41°

7. If the ratio of the sides of a triangle is 4:5:6 and inradius is 3cm then find the largest attitude

A) $\frac{45}{2}$ B) 10 C) 11.5 D) $\frac{45}{4}$

8. In triangle ABC, AD is the angle bisector of $\angle A$, meets BC at D. If BC = a, AC = b and AB = C, then (BD – DC) = ?

A) $\frac{a(c+b)}{c-b}$ B) $\frac{ac}{b+c}$ C) $\frac{a(c-b)}{c+b}$ D) $\frac{ab}{b+c}$

9. If O and I are the circumcenter and Incenter of triangle ABC respectively, $\angle BOC = 136°$, then $\angle BIC = ?$

A) 118° B) 124° C) 106° D) 121°

10. In a triangle ABC, $\angle B=90^\circ$. AB = 18 cm and AC = 30 cm, then what is the value of Inradius of incircle?

A) 4cm B) 6cm C) 8cm D) 7cm

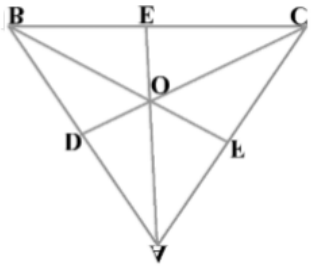
11. If 3 altitudes of a triangle are 3cm, 4cm and 5cm then what is the radius of incircle

A) $\frac{60}{47}$ cm B) $\frac{80}{47}$ cm C) 2.5 cm D) 2 cm

12. The perimeter of ΔABC is 24 cm and its side BC = 9 cm. AD is the bisector of $\angle BAC$, while I is the incentre. AI : ID is equal to

A) 7:5 B) 5:2 C) 3:2 D) 5:3

13. In the given figure O is the incentre of ΔABC. If AO : OE = 7 : 5, CO : OD = 4 : 3 then find BO : OF ?



A) $\frac{71}{13}$ B) $\frac{69}{15}$ C) $\frac{74}{17}$ D) $\frac{59}{11}$

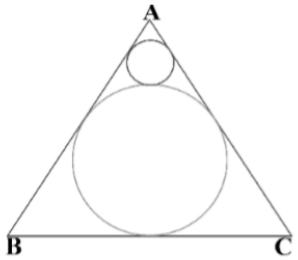
14. A circle is inscribed in triangle ABC, touching AB at P, BC at Q and AC at R. If AR = 5 cm, RC = 6 cm and AB = 12 cm then perimeter of triangle ABC is?

A) 40 cm B) 32 cm C) 37 cm D) 36 cm

15. In ΔABC, AB = 13cm, BC = 14cm and AC = 15cm. I is the point equidistant from all three sides AB, BC, AC respectively then find the area of triangle BIC?

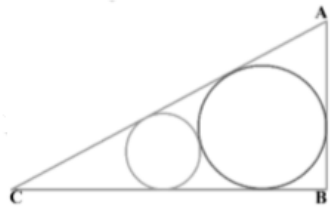
A) 28 B) 26 C) 32 D) 30

16. ABC is an equilateral triangle if Area of larger circle is $1422cm^2$ then area of smaller circle (in cm^2)?



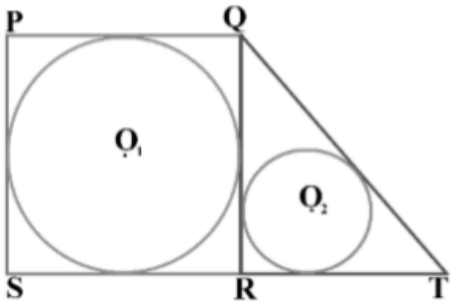
A) 154 B) 172 C) 158 D) 166

17. In the given figure, ABC is a right angled triangle. $\angle ABC=90°$ and $\angle ACB=60°$.
If the radius of the smaller circle is 2 cm, then what is the radius (in cm) of the larger circle ?



A) 4 **B) 6** **C) 4.5** **D) 7.5**

18. In the given figure, PQRS is a square of side 20cm and SR is extended to point T. If the length of QT is 25cm, then what is the distance (in cm) between the centres O_1 and O_2 of the two circles?



A) $5\sqrt{10}$ **B) $4\sqrt{10}$** **C) $8\sqrt{5}$** **D) $16\sqrt{2}$**

19. In a triangle ABC, angle bisectors of exterior angle B and C intersect at P. If $\angle BPC=40°$, then $\angle A=?$

A) 90° **B) 80°** **C) 120°** **D) 100°**

20. In a ΔABC, AB = 13 cm, BC = 14 cm and AC = 15 cm then find the radius of excircle made by bisectors of $\angle B$ and $\angle C$?

A) 12 cm **B) 15 cm** **C) 7.5cm** **D) 9cm**

21. Find the ratio of inradius and exradius in an equilateral triangle?

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