

Topic :- CO-ORDINATE GEOMETRY

- If a ΔABC , if $a^4 + b^4 + c^4 = 2c^2(a^2 + b^2)$, then $\angle C$ is equal to
a) 60° b) 135° c) 90° d) 75°
- Given the points $A(0, 4)$ and $B(0, -4)$, then the equation of the locus of the point $P(x, y)$ such that, $|AP - BP| = 6$, is
a) $\frac{x^2}{7} + \frac{y^2}{9} = 1$ b) $\frac{x^2}{9} + \frac{y^2}{7} = 1$ c) $\frac{x^2}{7} - \frac{y^2}{9} = 1$ d) $\frac{y^2}{9} - \frac{x^2}{7} = 1$
- If in ΔABC , $\sin \frac{A}{2} \sin \frac{C}{2} = \sin \frac{B}{2}$ and $2s$ is the perimeter of the triangle, then s is
a) $2b$ b) b c) $3b$ d) $4b$
- The angle of depression of a ship from the top of a tower 30 m high is 60° . Then the distance of ship from the base of tower is
a) 30 m b) $30\sqrt{3}$ m c) $10\sqrt{3}$ m d) 10 m
- At a distance $2h$ m from the foot of a tower of height h m the top of the tower and a pole at the top of the tower subtend equal angles. Height of the pole should be
a) $\frac{5h}{3}$ m b) $\frac{4h}{3}$ m c) $\frac{7h}{5}$ m d) $\frac{3h}{2}$ m
- From the tower 60 m high angles of depression of the top and bottom of a house are α and β respectively. If the height of the house is $\frac{60 \sin(\beta - \alpha)}{x}$, then x is equal to
a) $\sin \alpha \sin \beta$ b) $\cos \alpha \cos \beta$ c) $\sin \alpha \cos \beta$ d) $\cos \alpha \sin \beta$
- In a triangle, the lengths of the two larger sides are 10 cm and 9 cm respectively. If the angles of the triangle are in AP, then the length of the third side in cm can be
a) $5 - \sqrt{6}$ only b) $5 + \sqrt{6}$ only
c) $5 - \sqrt{6}$ or $5 + \sqrt{6}$ d) Neither $5 - \sqrt{6}$ nor $5 + \sqrt{6}$
- In ΔABC , if $\sin^2 \frac{A}{2}, \sin^2 \frac{B}{2}, \sin^2 \frac{C}{2}$ be in HP. Then, a, b, c will be in
a) AP b) GP c) HP d) None of these
- The angles of elevation of the top of a tower at the top and the foot of a pole of height 10 m are 30° and 60° respectively. The height of the tower is
a) 10 m b) 15 m c) 20 m d) None of these

10. If the points $(1, 1)$, $(-1, -1)$, $(-\sqrt{3}, \sqrt{3})$ are the vertices of a triangle, then this triangle is
 a) Right angled b) Isosceles c) Equilateral d) None of these
11. The vertices of a family of triangles have integer coordinates. If two of the vertices of all the triangles are $(0, 0)$ and $(6, 8)$, then the least value of areas of the triangles is
 a) 1 b) $\frac{3}{2}$ c) 2 d) $\frac{5}{2}$
12. In a ΔABC , $(\cot \frac{A}{2} + \cot \frac{B}{2})(a \sin^2 \frac{B}{2} + b \sin^2 \frac{A}{2})$ is equal to
 a) $\cot C$ b) $c \cot C$ c) $\cot \frac{C}{2}$ d) $c \cot \frac{C}{2}$
13. The intercepts on the straight line $y = mx$ by the line $y = 2$ and $y = 6$ is less than 5, then m belongs to
 a) $]-\frac{4}{3}, \frac{4}{3}[$ b) $]\frac{4}{3}, \frac{3}{8}[$ c) $]-\infty, -\frac{4}{3}[\cup]\frac{4}{3}, \infty[$ d) $]\frac{4}{3}, \infty[$
14. In ΔABC , $(b - c)\sin A + (c - a)\sin B + (a - b)\sin C$ is equal to
 a) $ab + bc + ca$ b) $a^2 + b^2 + c^2$ c) 0 d) None of these
15. The inradius of the triangle whose sides are 3, 5, 6 is
 a) $\sqrt{\frac{8}{7}}$ b) $\sqrt{8}$ c) $\sqrt{7}$ d) $\sqrt{\frac{7}{8}}$
16. In a ΔABC , if the sides are $a = 3$, $b = 5$ and $c = 4$, then $\sin \frac{B}{2} + \cos \frac{B}{2}$ is equal to
 a) $\sqrt{2}$ b) $\frac{\sqrt{3}+1}{2}$ c) $\frac{\sqrt{3}-1}{2}$ d) 1
17. The elevation of an object on a hill is observed from a certain point in the horizontal plane through its base, to be 30° . After walking 120 m towards it on level ground the elevation is found to be 60° . Then the height of the object (in metres) is
 a) 120 b) $60\sqrt{3}$ c) $120\sqrt{3}$ d) 60
18. If the area of the triangle with vertices $(x, 0)$, $(1, 1)$ and $(0, 2)$ is 4 sq unit, then the value of x is
 a) -2 b) -4 c) -6 d) 8
19. At a distance 12 metres from the foot A of a tower AB of height 5 metres, a flagstaff BC on top of AB and the tower subtend the same angle. The, the height of flagstaff is
 a) $\frac{1440}{119}$ metres b) $\frac{475}{119}$ metres c) $\frac{845}{119}$ metres d) None of these
20. A tower 50 m high, stands on top of a mount, from a point on the ground the angles of elevation of the top and bottom of the tower are found to be 75° and 60° respectively. the height of the mount is
 a) 25 m b) $25(\sqrt{3} - 1)$ m c) $25\sqrt{3}$ m d) $25(\sqrt{3} + 1)$ m