

Topic :- CO-ORDINATE GEOMETRY

- Let AB is divided internally and externally at P and Q in the same ratio. Then, AP , AB , AQ are in
a) AP b) GP c) HP d) None of these
- If the sum of the distance of a point P from two perpendicular lines in a plane is 1, then the locus of P is a
a) Rhombus b) Circle c) Straight line d) Pair of straight lines
- A flagpole stands on a building of height 450 ft and an observer on a level ground is 300 ft from the base of the building. The angle of elevation of the bottom of the flagpole is 30° and the height of the flagpole is 50ft. If θ is the angle of elevation of the top of the flagpole, then $\tan \theta$ is equal to
a) $\frac{4}{3\sqrt{3}}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{9}{2}$ d) $\frac{\sqrt{3}}{5}$
- In ΔABC , $2\left(a \sin^2 \frac{C}{2} + c \sin^2 \frac{A}{2}\right)$ is equal to
a) $a + b - c$ b) $c + a - b$ c) $b + c - a$ d) $a + b + c$
- Orthocenter of triangle with vertices $(0, 0)$, $(3, 4)$ and $(4, 0)$ is
a) $\left(3, \frac{5}{4}\right)$ b) $(3, 12)$ c) $\left(3, \frac{3}{4}\right)$ d) $(3, 9)$
- Three vertices of a parallelogram taken in order are $(-1, -6)$, $(2, -5)$ and $(7, 2)$. The fourth vertex is
a) $(1, 4)$ b) $(4, 1)$ c) $(1, 1)$ d) $(4, 4)$
- If in a ΔABC , $\cos A \cos B + \sin A \sin B \sin C = 1$, then the triangle is
a) Isosceles b) Right angled c) Isosceles right angled d) Equilateral
- If in a ΔABC , the sides AB and AC are perpendicular, then the true equation is
a) $\tan A + \tan B = 0$ b) $\tan B + \tan C = 0$ c) $\tan A + 2\tan C = 0$ d) $\tan B \tan C = 1$
- The points $(1, 1)$, $(-5, 5)$ and $(13, \lambda)$ lie on the same straight line, if λ is equal to
a) 7 b) -7 c) ± 7 d) 0
- Circumcentre of triangle whose vertices are $(0, 0)$, $(3, 0)$ and $(0, 4)$ is
a) $\left(\frac{3}{2}, 2\right)$ b) $\left(2, \frac{3}{2}\right)$ c) $(0, 0)$ d) None of these

11. The vertices of a triangle are $A(-1, -7), B(5, 1)$ and $C(1, 4)$. The equation of the bisector of angle ABC , is
 a) $x + 7y - 2 = 0$ b) $x - 7y - 2 = 0$ c) $x - 7y + 2 = 0$ d) None of these
12. A tower subtends angles $\alpha, 2\alpha$ and 3α respectively at points A, B and C , all lying on a horizontal line through the foot of the tower, then $\frac{AB}{BC}$ is equal to
 a) $\frac{\sin 3\alpha}{\sin 2\alpha}$ b) $1 + 2\cos 2\alpha$ c) $2\cos 2\alpha$ d) $\frac{\sin 2\alpha}{\sin \alpha}$
13. A person standing on the bank of a river finds that the angle of elevation of the top of a tower on the opposite bank is 45° , then which of the following statements is correct?
 a) Breadth of the river is twice the height of the tower
 b) Breadth of the river and the height of the tower are the same
 c) Breadth of the river is half of the height of the tower
 d) None of these
14. The angular depression of the top and the foot of the chimney as seen from the top of a second chimney which is 150 m high and standing on the same level as the first are θ and ϕ respectively. The distance between their tops when $\tan \theta = \frac{4}{3}$ and $\tan \phi = \frac{5}{2}$ is equal to
 a) 50 m b) 100 m c) 15 m d) None of these
15. A round balloon of radius r subtends an angle α at the eye of the observer, While the angle of elevation of its centre is β . The height of the center of balloon is
 a) $r \operatorname{cosec} \alpha \sin \frac{\beta}{2}$ b) $r \sin \alpha \operatorname{cosec} \frac{\beta}{2}$ c) $r \sin \frac{\alpha}{2} \operatorname{cosec} \beta$ d) $r \operatorname{cosec} \frac{\alpha}{2} \sin \beta$
16. In a ΔABC , a, c, A are given and b_1, b_2 are two values, if the third side b such that $b_2 = 2b_1$, then $\sin A$ is equal to
 a) $\frac{\sqrt{9a^2 - c^2}}{8a^2}$ b) $\sqrt{\frac{9a^2 - c^2}{8c^2}}$ c) $\frac{\sqrt{9a^2 + c^2}}{8a^2}$ d) None of these
17. If a, b, c are sides of a triangle, then
 a) $\sqrt{a} + \sqrt{b} > \sqrt{c}$ b) $|\sqrt{a} - \sqrt{b}| > \sqrt{c}$ (if c is smallest)
 c) $\sqrt{a} + \sqrt{b} < \sqrt{c}$ d) None of the above
18. ABC is a triangle with $\angle A = 30^\circ, BC = 10$ cm. The area of the circumcircle of the triangle is
 a) 100π sq cm b) 5 sq cm c) 25 sq cm d) $\frac{100\pi}{3}$ sq cm
19. In a ΔABC , $a:b:c = 4:5:6$. The ratio of the radius of the circumcircle to that of the incircle is
 a) $\frac{16}{9}$ b) $\frac{16}{7}$ c) $\frac{11}{7}$ d) $\frac{7}{16}$
20. The incentre of the triangle formed by lines $x = 0, y = 0$ and $3x + 4y = 12$, is at
 a) $(\frac{1}{2}, \frac{1}{2})$ b) (1, 1) c) $(1, \frac{1}{2})$ d) $(\frac{1}{2}, 1)$