DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : MATHS**
DATE : **DPP NO. : 8**

Topic :- CO-ORDINATE GEOMETRY

1. In radius of a circle which is inscribed in a isosceles triangle one of whose angle is $2\pi/3$, is $\sqrt{3}$, then area of triangle is
   a) $4\sqrt{3}$ b) $12-7\sqrt{3}$ c) $12+7\sqrt{3}$ d) None of these

2. A triangular park is enclosed on two sides by a fence and on the third side by a straight river bank. The two sides having fence are of same length$x$. The maximum area enclosed by the park is
   a) $\sqrt{\frac{x^3}{8}}$ b) $\frac{1}{2}x^2$ c) πx^2 d) $\frac{3}{2}x^2$

3. In a ΔABC, if $\tan\frac{A}{2}=\frac{5}{6}$,$\tan\frac{C}{2}=\frac{2}{5}$, then
   a) a, b, c are in AP b) a, b, c are in GP c) $b.a.c$ are in AP d) a, b, c are in AP

4. The vertices P, Q, R of a triangle are (2, 1), (5, 2) and (3, 4) respectively. Then, the circumcentre is
   a) $\left(\frac{13}{4}, -\frac{9}{4}\right)$ b) $\left(-\frac{13}{4}, \frac{9}{4}\right)$ c) $\left(-\frac{13}{4}, -\frac{9}{4}\right)$ d) $\left(\frac{13}{4}, \frac{9}{4}\right)$

5. In a $\Delta\, ABC$, $(a+b+c)(b+c-a)=kbc$, if
   a) $k<0$ b) $k>6$ c) $0<k<4$ d) $k>4$

6. If $A\ (6, -3), B(-3, 5), C(4, -2), P(\alpha,\beta)$, then the ratio of the areas of the triangles PBC , ABC is
   a) $|\alpha+\beta|$b) $|\alpha-\beta|$c) $|\alpha+\beta+2|$d) $|\alpha+\beta-2|$

7. ABC is a triangular park with $AB=AC=100$ m. A clock tower is situated at the mid point of BC . The angles of elevation of the top of the tower at A and B are $\cot^{-1}3.2$ and $\text{cosec}^{-1}2.6$ respectively. The height of the tower is
   a) 50 m b) 25 m c) 40 m d) None of these

8. In a $\Delta\, ABC$, $a\cot A+b\cot B+c\cot C$ is equal to
   a) $r+R$ b) $r-R$ c) $2(r+R)$ d) $2(r-R)$

9. If $(1,a)$, $(2,b)$, and $(3, c)$;$a, b, c \in R$ are the vertices of a triangle, its centroid can
   a) Not be on x-axis b) Not be on y-axis c) Be on (0, 0) d) None of these

10. The pair of lines $\sqrt{3}x^2 - 4xy + \sqrt{3}y^2 = 0$ are rotated about the origin by $\pi/6$ in the anti-clockwise sense. The equation of the pair in the new position is

a) $\sqrt{3}y^2 - xy = 0$ b) $\sqrt{3}x^2 - xy = 0$ c) $x^2 - y^2 = 0$ d) $\sqrt{3}x^2 + xy = 0$

11. In triangle ABC, $a = 2$, $b = 3$ and $\sin A = \frac{2}{3}$ then B is equal to

a) 30° b) 60° c) 90° d) 120°

12. If the sides of a right angle triangle form an AP, the 'sin' of the acute angles are

a) $\left(\frac{3}{5}, \frac{4}{5}\right)$ b) $\left(\sqrt{3}, \frac{1}{\sqrt{3}}\right)$ c) $\left(\sqrt{\frac{\sqrt{5}-1}{2}}, \sqrt{\frac{\sqrt{5}-1}{2}}\right)$ d) $\left(\sqrt{\frac{\sqrt{3}-1}{2}}, \sqrt{\frac{\sqrt{3}-1}{2}}\right)$

13. In a ΔABC, $2a^2 + 4b^2 + c^2 = 4ab + 2ac$, then $\cos B$ is equal to

a) 0 b) $\frac{1}{8}$ c) $\frac{3}{8}$ d) $\frac{7}{8}$

14. The line joining $A(b\cos\alpha, b\sin\alpha)$ and $B(a\cos\beta, a\sin\beta)$ is produced to the point $M(x,y)$ so that $AM:MB = b:a$, then
$x\cos\left(\frac{\alpha+\beta}{2}\right) + y\sin\left(\frac{\alpha+\beta}{2}\right)$ is

a) -1 b) 0 c) 1 d) $a^2 + b^2$

15. A house of height 100 m subtends a right angle at the window of an opposite house. If the height of the window be 64m, then the distance between the two houses is

a) 48 m b) 36 m c) 54 m d) 72 m

16. A vertical tower stands on a declivity which is inclined at 15° to the horizon. From the foot of the tower a man ascends the declivity for 80 ft and them, finds that the tower subtends an angle of 30°. The height of tower is

a) $20(\sqrt{6} - \sqrt{2})$ft b) $40(\sqrt{6} - \sqrt{2})$ft c) $40(\sqrt{6} + \sqrt{2})$ft d) None of these

17. $(0, -1)$ And $(0, 3)$ are two opposite vertices of a square. The other two vertices are

a) $(0, 1), (0, -3)$ b) $(3, -1), (0, 0)$ c) $(2, 1), (-2, 1)$ d) $(2, 2), (1, 1)$

18. The points $(1, 3)$ and $(5, 1)$ are two opposite vertices of a rectangle. The other two vertices lie on the line $y = 2x + c$, are

a) $(2, 0)$ and $(4, 4)$ b) $(2, 0)$ and $(-4, -4)$ c) $(2, 0)$ and $(-4, 4)$ d) $(-2, 0)$ and $(4, 4)$

19. If in a ΔABC, $r_3 = r_1 + r_2 + r$, then $\angle A + \angle B$ is equal to

a) 120° b) 100° c) 90° d) 80°

20. In a triangle ABC, if $a = 3$, $b = 4$, $c = 5$, then the distance between its incentre and circumcentre is

a) $\frac{1}{2}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{3}{2}$ d) $\frac{\sqrt{5}}{2}$