

VGR COACHING CENTER

9th Standard

Maths chapter 5 & 6

Time : 02:30:00 Hrs

Total Marks : 100

14 x 1 = 14

CHOOSE THE CORRECT ANSWER

1. if $\sin 30^\circ = x$ and $\cos 60^\circ = y$, then $x^2 + y^2$ is
(a) $1/2$ (b) 0 (c) $\sin 90^\circ$ (d) $\cos 90^\circ$
2. If $\tan \theta \cot 37^\circ$, then the value of θ is
(a) 37° (b) 53° (c) 90° (d) 1°
3. The value of $\tan 72^\circ \tan 18^\circ$ is
(a) 0 (b) 1 (c) 18° (d) 72°
4. The value of $\tan 15^\circ \cot 75^\circ \tan 15^\circ \cot 75^\circ$ is
(a) $\cos 90^\circ$ (b) $\sin 30^\circ$ (c) $\tan 45^\circ$ (d) $\cos 30^\circ$
5. if $\sin \alpha = 1/2$ and α is a acute, then $(3 \cos \alpha - 4 \cos^3 \alpha)$ is equal to
(a) 0 (b) $1/2$ (c) $1/6$ (d) -1
6. The value of $3 \sin 70^\circ \sec 20^\circ + 2 \sin 49^\circ \sec 51^\circ$ is
(a) 2 (b) 3 (c) 5 (d) 6
7. The value of $\operatorname{cosec}(70^\circ + \theta) - \sec(20^\circ - \theta) + \tan(65^\circ + \theta) - \cot(25^\circ - \theta)$ is
(a) 0 (b) 1 (c) 2 (d) 3
8. The coordinates of the point C dividing the line segment joining the points P(2, 4) and Q(5, 7) internally in the ratio 2:1 is
(a) $(7/2, 11/2)$ (b) (3, 5) (c) (4, 4) (d) (4, 6)
9. In what ratio does the point Q(1, 6) divide the line segment joining the points P(2, 7) and R(-2, 3)
(a) 1 : 2 (b) 2 : 1 (c) 1 : 3 (d) 3 : 1

10. The ratio in which the x-axis divides the line segment joining the points $A(a_1, b_1)$ and $B(a_2, b_2)$ is
(a) $b_1 : b_2$ (b) $-b_1 : b_2$ (c) $a_1 : a_2$ (d) $-a_1 : a_2$
11. If the coordinates of the mid-points of the sides AB, BC and CA of a triangle are $(3, 4)$, $(1, 1)$ and $(-2, 3)$
(a) $(3, 2)$, $(2, 4)$ (b) $(4, 0)$, $(2, 8)$ (c) $(3, 4)$, $(2, 0)$ (d) $(4, 3)$, $(2, 4)$
12. In what ratio does the y-axis divide the line joining the points $(-5, 1)$ and $(2, 3)$ internally
(a) $1 : 3$ (b) $2 : 5$ (c) $3 : 1$ (d) $5 : 2$
13. If $(1, -2)$, $(3, 6)$, $(x, 10)$ and $(3, 2)$ are the vertices of the parallelogram taken in order, then the value of x is
(a) 6 (b) 5 (c) 4 (d) 3
14. The centroid of the triangle with vertices $(-1, -6)$, $(-2, 12)$ and $(9, 3)$ is
(a) $(3, 2)$ (b) $(2, 3)$ (c) $(4, 3)$ (d) $(3, 4)$

PART-B

Q.NO 25 IS COMPULSORY

15. The centre of a circle is $(-4, 2)$. If one end of the diameter of the circle is $(-3, 7)$ then find the other end.
16. The centroid of a triangle is at $(4, -2)$ and two of its vertices are $(3, -2)$ and $(5, 2)$ then find the third vertex of the triangle.
17. If $(x, 3)$, $(6, y)$, $(8, 2)$ and $(9, 4)$ are the vertices of a parallelogram taken in order, then find the value of x and y.
18. What are the coordinates of B if point $P(-2, 3)$ divides the line segment joining $A(-3, 5)$ and B internally in the ratio $1 : 6$?
19. Plot the following points in the coordinate system and identify the quadrants $P(-7, 6)$, $Q(7, -2)$, $R(-6, -7)$, $S(3, 5)$ and $T(3, 9)$
20. Find the distance between the following pairs of points. $(1, 2)$ and $(4, 3)$

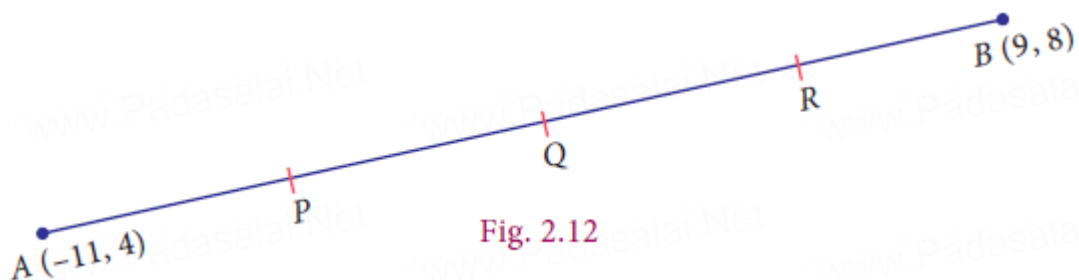
21. Determine whether the given set of points in each case are collinear or not $(a, -2), (a, 3), (a, 0)$
22. $A(-1, 1), B(1, 3)$ and $C(3, a)$ respectively and if $AB = BC$, then find 'a'.
23. From the given figure find all the trigonometric ratios of angle B.



24. Find the value of $\sin 3x \cdot \sin 6x \cdot \sin 9x$ when $x = 10^\circ$
25. Evaluate:
- $\sin 49^\circ / \cos 41^\circ$
 - $\sec 63^\circ / \operatorname{cosec} 27^\circ$
26. If $\operatorname{cosec} A = \sec 34^\circ$, find A
27. Find the value of θ if
- $\sin \theta = 0.9858$
 - $\cos \theta = 0.7656$

PART-C ANY 10 Q.NO 38 IS COMPULSORY

28. The mid-point of the sides of a triangle are $(2, 4), (-2, 3)$ and $(5, 2)$. Find the coordinates of the vertices of the triangle.
29. Find the points which divide the line segment joining $A(-11, 4)$ and $B(9, 8)$ into four equal parts.



30. In what ratio does the point P(2, -5) divide the line segment joining A(-3, 5) and B(4, -9)
31. Show that the following points taken in order form vertices of a parallelogram. A(-3, 1), B(-6, -7), C (3, -9) and D(6, -1)
32. Let A(2, 3) and B(2, -4) be two points. If P lies on the x-axis, such that $AP = \frac{3}{7} AB$, find the coordinates of P.
33. Find the values of the following:
- (i) $(\cos 0^\circ + \sin 45^\circ + \sin 30^\circ)(\sin 90^\circ - \cos 45^\circ + \cos 60^\circ)$
- (ii) $\tan^2 60^\circ - 2\tan^2 45^\circ - \cot^2 30^\circ + 2\sin^2 30^\circ + \frac{3}{4} \operatorname{cosec}^2 45^\circ$
34. $3 \cot A = 2$, then find the value of $\frac{4 \sin A - 3 \cos A}{2 \sin A + 3 \cos A}$
35. Find the value of
- (i) $\sin 38^\circ 36' + \tan 12^\circ 12'$
- (ii) $\tan 60^\circ 25' - \cos 49^\circ 20'$
36. If $\sec \theta = \frac{13}{5}$, then show that $\frac{2 \sin \theta - 3 \cos \theta}{4 \sin \theta - 9 \cos \theta} = 3$
37. Write the values of trigonometry 0, 30, 45, 60, 90 of all the ratio
38. Find the value of 'a' such that PQ=QR where P, Q AND R the points whose coordinates (6,-1) (1,3) and (a,8)
39. Find the co ordinates the point of trisection line segment joining the points (-5,6) (4,-3)

PART-D

40. Construct centroid PQR if PQ=8 cm QR=6 cm RP=7cm
(OR) Construct ;_PQR PQ-6cm angle 60° QR=7 cm locate the orthocentre
41. Solve the graph $y=4x-1$ OR
Solve $3x+2y=6$, $6x+4y=8$

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