



Global Maths Olympiad

Class-XII

Sample Questions

1. If $O(A) = 2 \times 3, O(B) = 3 \times 2$, and $O(C) = 3 \times 3$, which one of the following is not defined?
 - (a) $CB+A'$
 - (b) BAC
 - (c) $C(A+B')'$
 - (d) $C(A+B')$
2. If A and B are two matrices and $(A+B)(A-B) = A^2 - B^2$, then
 - (a) $AB = BA$
 - (b) $A^2 + B^2 = A^2 - B^2$
 - (c) $A'B' = AB$
 - (d) All of these
3. If $\cos^{-1} \left(\frac{1}{x} \right) = \theta$, then $\tan \theta =$
 - (a) $\frac{1}{\sqrt{x^2 - 1}}$
 - (b) $\sqrt{x^2 + 1}$
 - (c) $\sqrt{1 - x^2}$
 - (d) $\sqrt{x^2 - 1}$
4. The principal value of $\sin^{-1} \left(-\frac{\sqrt{3}}{2} \right)$ is
 - (a) $\frac{-2\pi}{3}$



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(b) $\frac{-\pi}{3}$

(c) $\frac{4\pi}{3}$

(d) $\frac{5\pi}{3}$

5. If $\tan^{-1} 2x + \tan^{-1} 3x = \frac{\pi}{4}$, Then $x =$

(a) -1

(b) $\frac{1}{6}$

(c) $-1, \frac{1}{6}$

(d) $\frac{1}{3}$

6. $\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3} =$

(a) 0

(b) $\frac{\pi}{4}$

(c) $\frac{\pi}{2}$

(d) π

7. If the distance between the points $(a, 2)$ and $(3, 4)$ be 8, then $a =$

(a) $2+3\sqrt{15}$



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(b) $2 - 3\sqrt{15}$

(c) $2 \pm 3\sqrt{15}$

(d) $3 \pm 2\sqrt{15}$

8. 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) $(4, 4)$

9. Perpendicular distance of the point $(3, 4, 5)$ from the y-axis, is

(a) $\sqrt{34}$

(b) $\sqrt{41}$

(c) 4

(d) 5

10. The angle between the straight lines

$$\frac{x+1}{2} = \frac{y-2}{5} = \frac{z+3}{4} \text{ and } \frac{x-1}{1} = \frac{y+2}{2} = \frac{z-3}{-3} \text{ is.}$$

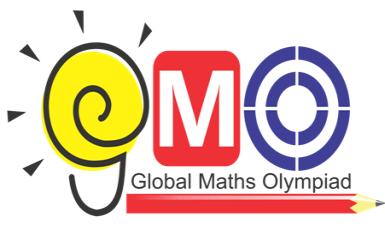
(a) 45°

(b) 30°

(c) 60°

(d) 90°





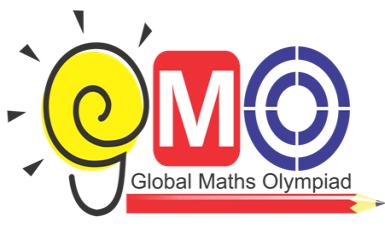
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