



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



WORKSHEET-6

SUBJECT - MATHEMATICS

Term : 1st

Topic – Trigonometric inverse circular function function

Class: XII

Full Marks: 15

Date:18.05.2020

Select the correct alternative of the following questions.

- Q1. The principal value of $\cos^{-1}(\frac{-1}{2})$ is
- a. $\frac{\pi}{3}$ b. $\frac{2\pi}{3}$ c. $\frac{\pi}{4}$ d. none of these
- Q2. The principal value of $\operatorname{cosec}^{-1}(-\sqrt{2})$ is
- a. $-\frac{\pi}{4}$ b. $\frac{3\pi}{4}$ c. $-\frac{\pi}{3}$ d. none of these
- Q3. The principal value of $\cot^{-1}(\frac{1}{\sqrt{3}})$ is
- a. $\frac{\pi}{6}$ b. $\frac{\pi}{4}$ c. $\frac{\pi}{3}$ d. none of these
- Q4. The principal value of $\tan^{-1}(-\sqrt{3})$ is
- a. $\frac{\pi}{3}$ b. $\frac{\pi}{4}$ c. $-\frac{\pi}{4}$ d. none of these
- Q5. The principal value of $\cot^{-1}(\frac{-1}{\sqrt{3}})$ is
- a. $\frac{2\pi}{3}$ b. $\frac{\pi}{4}$ c. $\frac{\pi}{6}$ d. none of these
- Q 6. The general value of $\sin^{-1}(\frac{\sqrt{3}}{2})$ is
- a. $n\pi - (-1)^n \frac{\pi}{3}$ b. $n\pi + (-1)^n \frac{\pi}{3}$ c. $n\pi + (-1)^n \frac{\pi}{6}$ d. none of these

- Q7. The general value of $\cos^{-1}(-1)$ is
- a. $2n\pi \pm \frac{\pi}{2}$ b. $2n\pi \pm \frac{\pi}{3}$ c. $2n\pi \pm \pi$ d. none of these
- Q8. The general value of $\cot^{-1}(-\sqrt{3})$ is
- a. $n\pi + \frac{5\pi}{6}$ b. $n\pi - \frac{5\pi}{6}$ c. $n\pi + \frac{\pi}{6}$ d. none of these
- Q9. If $2\tan^{-1}x = \sin^{-1}k$, then the value of k is
- a. $\frac{1-x^2}{1+x^2}$ b. $\frac{2x}{1-x^2}$ c. $\frac{2x}{1+x^2}$ d. none of these
- Q10. $\tan^{-1}\frac{1}{2} + \tan^{-1}\frac{1}{3}$
- a. $\frac{\pi}{2}$ b. $\frac{\pi}{3}$ c. $\frac{\pi}{6}$ d. none of these
- Q11. Which of the following is the value of $\cot^{-1}(\operatorname{cosec}^{-1}2 + \cos^{-1}\frac{1}{2})$
- a. 1 b. 0 c. -1 d. none of these
- Q12. Which of the following is the value of $\tan^{-1}(\cos^{-1}\frac{1}{2} + 2\sin^{-1}\frac{1}{2})$
- a. $\frac{5\pi}{6}$ b. $\frac{\pi}{3}$ c. $\frac{2\pi}{3}$ d. none of these
- Q13. Which of the following is the value of $(\cos^{-1}\frac{1}{x} + \cos^{-1}\frac{1}{y})$, where $\sec^{-1}x = \operatorname{cosec}^{-1}y$
- a. π b. $\frac{2\pi}{3}$ c. $\frac{5\pi}{6}$ d. none of these
- Q11. Which of the following is the value of $(\sin^{-1}x - \cos^{-1}x = \frac{\pi}{6})$
- a. 1 b. $\frac{1}{2}$ c. $\frac{1}{\sqrt{2}}$ d. none of these
- Q11. Which of the following is the value of $\tan^{-1}(\tan^{-1}x + \tan^{-1}\frac{1}{x})$ for $x > 0$,
- a. $\frac{1}{\sqrt{3}}$ b. $\sqrt{3}$ c. 1 d. none of these