



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



Solutions of worksheet-2

SUBJECT – MATHEMATICS

1st term

Chapter: Trigonometry

Class: XI

Topic: Trigonometric Ratios of Compound & Multiple angles

Date: 16.06.2020

Choose the correct option

(1 X 15= 15)

1. $\sin(45^\circ - \theta) = ?$

- a) $\frac{1}{\sqrt{3}}(\sin \theta - \cos \theta)$
- b) $\frac{1}{\sqrt{2}}(\sin \theta - \cos \theta)$
- c) $\frac{1}{\sqrt{3}}(-\sin \theta + \cos \theta)$
- d) $\frac{1}{\sqrt{2}}(-\sin \theta + \cos \theta)$

2. $\tan(45^\circ + \theta) \tan(45^\circ - \theta) = ?$

- a) 0
- b) $\frac{1}{\sqrt{3}}$
- c) 1
- d) $\sqrt{3}$

3. $\tan \theta + \cot 2\theta = ?$

- a) $\sin^2 2\theta$
- b) $\cot^2 2\theta$
- c) $\operatorname{cosec}^2 2\theta$
- d) $\tan^2 2\theta$

4. $2 \cos\left(\frac{\pi}{3} + A\right) = ?$

- a) $\cos A - \sqrt{3} \sin A$
- b) $\cos A - \sqrt{2} \sin A$
- c) $\sin A - \sqrt{3} \cos A$
- d) $\sin A - \sqrt{2} \cos A$

5. $\sin A = \frac{3}{5}$, $\cos B = -\frac{12}{13}$ where A and B both lie in 2nd quadrant, then the value of (A+B) = ?

- a) $\frac{56}{65}$
- b) $-\frac{56}{65}$
- c) $\frac{65}{56}$
- d) $-\frac{65}{56}$

6. $\frac{\cos 9^\circ + \sin 9^\circ}{\cos 9^\circ - \sin 9^\circ} = ?$

- a) $\sin 54^\circ$
- b) $\cos 54^\circ$
- c) $\tan 54^\circ$
- d) $\cot 54^\circ$

7. $\sin A + \sin B = 2$, then the value of $\sin(A + B) = ?$

- a) 2
- b) 0
- c) 1
- d) -1

8. $\tan A = \frac{3}{4}$ & $\tan A \tan B = 1$, then the value of (A+B) = ?

- a) $\frac{\pi}{4}$
- b) $\frac{3\pi}{4}$
- c) π
- d) $\frac{\pi}{2}$

9. $\frac{1}{\sin 10^\circ} - \frac{\sqrt{3}}{\cos 10^\circ} = ?$

- a) 2
- b) 4
- c) 6
- d) 8

10. $16 \cos \frac{2\pi}{15} \cos \frac{4\pi}{15} \cos \frac{8\pi}{15} \cos \frac{16\pi}{15} = ?$

- a) 1
- b) 2
- c) 3
- d) 4

11. $(1 + \cos \frac{\pi}{8})(1 + \cos \frac{3\pi}{8})(1 + \cos \frac{5\pi}{8})(1 + \cos \frac{7\pi}{8}) = ?$

- a) $\frac{3}{8}$
- b) $\frac{1}{8}$**
- c) $\frac{5}{8}$
- d) $\frac{7}{8}$

12. Given $2 \cos \theta = x + \frac{1}{x}$. Then the value of $\cos 2\theta = ?$

- a) $x^2 + \frac{1}{x^2}$
- b) $\frac{1}{2}(x^2 + \frac{1}{x^2})$**
- c) $x^3 + \frac{1}{x^3}$
- d) $\frac{1}{2}(x^3 + \frac{1}{x^3})$

13. If $\sin \theta = \frac{3}{5}$, then the value of $\cos 2\theta = ?$

- a) $\frac{7}{15}$
- b) $\frac{8}{25}$
- c) $\frac{2}{5}$
- d) $\frac{7}{25}$**

14. If $\sin \theta = \frac{3}{5}$, then the value of $\sin 3\theta = ?$

- a) $\frac{17}{25}$
- b) $\frac{117}{125}$**
- c) $\frac{24}{25}$
- d) $\frac{119}{125}$

15. $\tan 70^\circ - \tan 50^\circ + \tan 10^\circ = ?$

- a) $\sqrt{1}$
- b) $\sqrt{2}$
- c) 3
- d) $\sqrt{3}$**