ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

Worksheet-1

SUBJECT – MATHEMATICS

1st term

Chapter: Trigonometry **Class: XI**

Topic: Trigonometric Ratios of associated angles **Date: 15.06.2020**

Choose the correct option **(1 X 15= 15)**

1. If $\tan\theta = x - \frac{1}{4x}$, then $\sec\theta - \tan\theta$ is equal to

   (a) $-2x, \frac{1}{2x}$ (b) $-\frac{1}{2x}, 2x$ (c) $2x$ (d) $2x, \frac{1}{2x}$

2. If $\sec\theta = x + \frac{1}{4x}$, then $\sec\theta + \tan\theta$ =

   (a) $x, \frac{1}{x}$ (b) $2x, \frac{1}{2x}$ (c) $-2x, \frac{1}{2x}$ (d) $-\frac{1}{x}, x$

3. If $\frac{\pi}{2} < \theta < \frac{3\pi}{2}$, then $\sqrt{\frac{1-\sin\theta}{1+\sin\theta}}$ is equal to

   (a) $\sec\theta - \tan\theta$ (b) $\sec\theta + \tan\theta$ (c) $\tan\theta - \sec\theta$ (d) none of these

4. If $\pi < \theta < 2\pi$, then $\sqrt{\frac{1+\cos\theta}{1-\cos\theta}}$ is equal to

   (a) $\text{cosec}\,\theta + \cot\theta$ (b) $\text{cosec}\,\theta - \cot\theta$ (c) $-\text{cosec}\,\theta + \cot\theta$ (d) $-\text{cosec}\,\theta - \cot\theta$

5. **The maximum value of $\sin\theta \cdot \cos\theta$ is –**

   a) ½ **b) 1** **c) 2** **d) ∞**

6. If $\frac{\pi}{2} < \theta < \pi$, then $\sqrt{\frac{1-\sin\theta}{1+\sin\theta}} + \sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$ *is equal to*

(a) $2\sec\theta$ (b) $-2\sec\theta$ (c) $\sec\theta$ (d) $-\sec\theta$

7. If $\tan\theta = -\frac{4}{3}$, then the value of $\sin\theta + \cos\theta$ is –

a) $\pm\frac{4}{5}$ **b)** $\pm\frac{3}{5}$ **c)** $\pm\frac{1}{5}$ **d)** $\frac{1}{5}$

8. If $\tan\theta + \sec\theta = \sqrt{3}$, $0 < \theta < \pi$, then θ is equal to

(a) $\frac{5\pi}{6}$ (b) $\frac{2\pi}{3}$ (c) $\frac{\pi}{6}$ (d) $\frac{\pi}{3}$

9. If $\sin\theta = -\frac{1}{2}$, then $\theta =$?

a) $30°$ **b)** $120°$ **c)** $150°$ **d)** $210°$

10. The value of $\cos(-1170°)$ = ?

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

11. $\sin(\theta - 540°)$= ?

a) $\sin\theta$ **b)** $-\sin\theta$ **c)** $\cos\theta$ **d)** $-\cos\theta$

12. Value of $\cos(\frac{5\pi}{2} - \frac{19\pi}{3})$ = ?

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

13. $\cos 24° + \cos 55° + \cos 125° + \cos 204° + \cos 300°$ = ?

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

14. $\tan 181° \tan 182° \tan 183° \cdots \tan 268° \tan 269°$ = ?

a) 1 **b)** 0 **c)** ∞ **d)** $\sqrt{3}$

15. Minimum value of $2^{(\sin\theta)^2} + 2^{(\cos\theta)^2}$ is –

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

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