ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

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. $\sin(45° - \theta) = ?$

   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. $\tan(45° + \theta)\tan(45° - \theta) = ?$

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

   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. $\tan 70° - \tan 50° + \tan 10° =$?

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

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