INDIAN SCHOOL NIZWA

MATHEMATICS
CH:3 –TRIGONOMETRIC FUNCTIONS

Name: _____ Date: 14/05/24 Class: XI Sec: A

1.Convert 630◦ into radian.

2. convert $11\frac{\pi}{4}$ radian into degree.

3.Find the value of the following :

(i) $\sin\left(\frac{-7\pi}{6}\right)$ (ii) $\tan\frac{7\pi}{4}$

4. if tanx = ¾, evaluate tan2x.

5. if sinx = 3/5, evaluate (i) sin3x (ii) cos 2x

6. If sinx = -2/5 and cosy= -1/3 and both x and y belongs to third quadrant,

find (i) sin (x+y) (ii) cos(x+y).

7.Evaluate $sin^2\left(\frac{7\pi}{6}\right) + tan^2\left(\frac{3\pi}{4}\right) - cos^2\left(\frac{7\pi}{4}\right)$.

8. Prove that $\frac{sin5x-2sin3x+sinx}{cos5x-cosx}$=tanx

9.Prove that tan7x – tan5x – tan2x = tan7x.tan5x.tan2x

10.Find the value of sin(40+x) cos(10+x) – cos(40+x) sin(10+x).

11.Find the value of $\frac{cos(\pi+x)cos(-x)}{sin(\pi-x)cos\left(\frac{\pi}{2}+x\right)}$

12. Show that cos24 + cos55 + cos125 + cos204 + cos300 = ½

13.Find tan15. Hence prove that tan15 + cot15 = 4.

14.Prove that tan56 = $\frac{cos11+sin11}{cos11-sin11}$.

15.Prove that $\frac{1+sin2x-cos2x}{1+sin2x+cos2x} = tanx$.

16.Prove that $(cosx + cosy)^2 + (sinx - siny)^2 = 4cos^2\left(\frac{x+y}{2}\right)$

17.Prove that $\frac{cos2x+cos3x+cos4x}{sin2+sin3x+sin4x} = cot3x$

18.If A + B = $\frac{\pi}{4}$, $prove\ that\ (1 + tanA)(1 + tanB) = 2.$

19. Prove that $\sqrt{2 + \sqrt{2 + \sqrt{2 + 2cos8x}}} = 2cosx.$

20.Prove that $\frac{sec8A-1}{sec4A+1} = \frac{tan8A}{tan2A}$

****