XI Maths Worksheet

Time: 60 min **Chapter#3 : Trigonometric Functions** **Full Marks:**

Q.1	**If tan A = $\sqrt{3}$, then what is tan 2A?**
Q.2	Solve : $2\cos^2 x+3\sin x = 0$
Q.3	Evaluate : $\sin(40°+\theta)\cos(10°+\theta) - \cos(40°+\theta)\sin(10°+\theta)$
Q.4	Prove that $\cot x \cot 2x – \cot 2x \cot 3x – \cot 3x \cot x = 1$. (3 marks)
Q.5	Find the value of $\sin 150° + \cos 300°$.
Q.6	If in two circles, arcs of the same length subtend angles 75° and 120º at the centre, find the ratio of their radii.
Q.7	If in two circles, arcs of same length, subtend angles 120º and 150º at the centre, find the ratio of their radii. (3 marks)
Q.8	Write the value of tan 15°.
Q.9	Prove that : $(\cos x + \cos y)^2 + (\sin x – \sin y)^2 = 4\cos^2 \frac{x+y}{2}$
Q.10	Find the value of $\cos 55° + \cos 125° + \cos 300°$.
Q.11	Find the value of sin 15°.
Q.12	Prove that: $(\sin 3x + \sin x)\sin x + (\cos 3x – \cos x)\cos x = 0$. (3 marks)
Q.13	A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second? (1 mark)
Q.14	Prove that $\frac{\cos 19^\circ – \sin 19^\circ}{\cos 19^\circ + \sin 19^\circ} = \cot 74^\circ$ (3 marks)
Q.15	If $\cot 2A = \tan(n - 2)A$, then what is A?
Q.16	Solve $\cos 2\theta – \cos \theta = 0$ (3 marks)
Q.17	**Write the general solution of $\cos x = \frac{1}{2}$**
Q.18	Prove that $\frac{\sec 8\theta - 1}{\sec 4\theta - 1} = \frac{\tan 8\theta}{\tan 2\theta}$
Q.19	Prove that $\cos^2 A + \cos^2 B - 2\cos A \cos B \cos(A+B) = \sin^2(A+B)$
Q.20	**Find the principal solutions of the equation tan x = $\sqrt{3}$.**