



INDIAN SCHOOL AL WADI AL KABIR

Class XI, Mathematics **Worksheet - Trigonometry**

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Q1.	The length of an arc of a circle radius 10cm which subtends an angle of 45° at the Centre= _____ cm							
A	$\frac{5\pi}{2}$	B	450	C	5π	D	10π	
Q2.	$\cot\left(-\frac{15\pi}{4}\right) =$							
A	1	B	2	C	-1	D	$\sqrt{3}$	
Q3.	$\cot\left(\frac{\pi}{8}\right) =$							
A	$\sqrt{2} - 1$	B	$\sqrt{2}$	C	$\sqrt{2} + 1$	D	1	
Q4.	If $\sin\frac{7\pi}{6} + x \cos\frac{2\pi}{3} = 0$ then $x = ?$							
A	0	B	2	C	1	D	-1	
Q5.	If $3\cos x = 4\sin x$, $x \in I$ quadrant, then $\cos x = ?$							
A	$\frac{3}{4}$	B	$\frac{4}{5}$	C	$\frac{3}{5}$	D	$\frac{4}{3}$	
Q6.	$225^\circ = ___ \text{radian}$							
A	$\frac{\pi}{4}$	B	$\frac{3\pi}{4}$	C	$\frac{5\pi}{4}$	D	$\frac{7\pi}{4}$	
Q7.	If a wheel revolves 720 times in a minute, then the radian measure covers in one second is:							
A	24π	B	12π	C	6π	D	3π	
Q8.	$\frac{\sin\left(\frac{\pi}{2} - x\right) \cos\left(3\frac{\pi}{2} - x\right)}{\cos(\pi - x) \sin(\pi + x)} =$							
A	1	B	-1	C	$\tan x$	D	$\cot x$	

Q9.	If $\text{Sec}\theta = \sqrt{2}$ and $\frac{3\pi}{2} < \theta < 2\pi$, then the value of: $\frac{1+\tan\theta+\sec\theta}{1+\cot\theta-\text{cosec}\theta} =$							
A	$1 - \sqrt{2}$	B	$\sqrt{2} + 1$	C	$2\sqrt{2}$	D	1	
Q10.	$\text{cosec}(-1470^\circ) =$							
A	$\sqrt{2}$	B	$-\sqrt{2} + 1$	C	-2	D	$-\frac{2}{\sqrt{3}}$	
Q11.	Prove: $\frac{\sin 3x + \sin 5x}{\cos 3x + \cos 5x} = \tan 4x$							
Q12.	Prove: $\sqrt{2 + \sqrt{2 + 2\cos 4\theta}} = 2\cos\theta$							
Q13.	Prove that if $\tan A = x \tan B$, then $\frac{\sin(A-B)}{\sin(A+B)} = \frac{x-1}{x+1}$							
Q14.	If $\sin A = \frac{3}{5}$ and $\sin B = \frac{5}{13}$, then evaluate $\sin(A + B)$.							
Q15.	If $\tan x = \frac{4}{3}$, x lies in the third quadrant, find the values of $\sin \frac{x}{2}$, $\cos \frac{x}{2}$ and $\tan \frac{x}{2}$							
Q16.	Prove that: $\cos^2 \frac{\pi}{8} + \cos^2 \frac{3\pi}{8} + \cos^2 \frac{5\pi}{8} + \cos^2 \frac{7\pi}{8} = 2$							
Q17.	Prove: $(1 + \cos \frac{\pi}{8})(1 + \cos \frac{3\pi}{8})(1 + \cos \frac{5\pi}{8})(1 + \cos \frac{7\pi}{8}) = \frac{1}{8}$							
Q18.	If $\tan A = \frac{p}{p-1}$, and $\tan B = \frac{1}{2p-1}$, prove $A - B = \frac{\pi}{4}$							
Q19.	Prove: $\tan 3x \tan 2x \tan x = \tan 3x - \tan 2x - \tan x$							
Q20.	Prove that $\cos^2 A + \cos^2(A + \frac{\pi}{3}) + \cos^2(A - \frac{\pi}{3}) = \frac{3}{2}$							

ANSWER

Q1	A	Q2	A	Q3	C	Q4	D	Q5	B
Q6	C	Q7	A	Q8	B	Q9	D	Q10	C
Q14	$\sin(A+B) = \frac{56}{65}$			Q15	$\sin \frac{x}{2} = \frac{2}{\sqrt{5}}$, $\cos \frac{x}{2} = -\frac{1}{\sqrt{5}}$ and $\tan \frac{x}{2} = -2$				