



INDIAN SCHOOL AL WADI AL KABIR

Class X - Mathematics (2026-27)

Worksheet – Introduction to Trigonometry

07-10-2026

Questions of 1 mark each

Q.1.	The value of $\left(\sin^2 \theta + \frac{1}{1 + \tan^2 \theta}\right)$ is							
	A	0	B	2	C	1	D	-1
Q.2.	If $\tan^2 \theta + \cot^2 \alpha = 2$, where $\theta = 45^\circ$ and $0^\circ \leq \alpha \leq 90^\circ$, then the value of α is							
	A	30°	B	45°	C	60°	D	90°
Q.3.	$\frac{\sin^3 A + \cos^3 A}{\sin A + \cos A} + \sin A \cos A$ on simplification gives							
	A	1	B	2	C	$1 + 2 \sin A \cos A$	D	0
Q.4.	If $\operatorname{cosec} \theta = \sqrt{10}$, then the value of $\sec \theta$ is							
	A	$\frac{3}{\sqrt{10}}$	B	$\frac{\sqrt{10}}{3}$	C	$\frac{1}{\sqrt{10}}$	D	$\frac{2}{\sqrt{10}}$
Q.5.	If $\tan \theta = \frac{5}{2}$, then $\frac{4 \sin \theta + \cos \theta}{4 \sin \theta - \cos \theta}$ is equal to							
	A	$\frac{11}{9}$	B	$\frac{3}{2}$	C	$\frac{9}{11}$	D	$\frac{4}{11}$
Q.6.	If $\theta = 30^\circ$, then the value of $3 \tan \theta$ is							
	A	1	B	$\frac{1}{\sqrt{3}}$	C	$\frac{3}{\sqrt{3}}$	D	not defined
Q.7.	If $\sin \theta = \frac{a}{b}$, then $\cos \theta$ is							
	A	$\frac{b}{\sqrt{b^2 - a^2}}$	B	$\frac{b}{a}$	C	$\frac{\sqrt{b^2 - a^2}}{b}$	D	$\frac{a}{\sqrt{b^2 - a^2}}$

Q.8.	The value of θ for which $\cos (10^\circ + \theta) = \sin 30^\circ$, is							
	A	50°	B	40°	C	80°	D	20°
Q.9.	If $3x = \sec \theta$ and $\frac{3}{x} = \tan \theta$, then $(x^2 - \frac{1}{x^2})$ is equal to							
	A	3	B	1	C	$\frac{1}{9}$	D	9
Q.10.	The value of $\frac{2 \tan 45^\circ \times \cos 60^\circ}{\sin 30^\circ}$ is							
	A	$2\sqrt{2}$	B	2	C	1	D	$\frac{1}{2}$
Q.11.	The value of $(\tan \theta \cdot \operatorname{cosec} \theta)^2 - (\sin \theta \cdot \sec \theta)^2$ is							
	A	1	B	0	C	-1	D	2
Q.12.	If $\sec \theta + \tan \theta = 7$, then find the value of $\sec \theta - \tan \theta$ is							
	A	1	B	$\frac{1}{7}$	C	-7	D	-1
ASSERTION AND REASONING								
	DIRECTION: In question numbers 11, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A) (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A) (c) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.							
Q.13.	Assertion(A): If $x = 2 \sin^2 \theta$ and $y = 2 \cos^2 \theta + 1$ then the value of $x + y = 3$. Reason(R): For any value of θ, $\sin^2 \theta + \cos^2 \theta = 1$.							
Q.14.	Assertion(A): In a right $\triangle ABC$, right angled at B, if $\tan A = 1$, then $2 \sin A \cdot \cos A = 1$ Reason(R): Cosec A is the abbreviation used for cosecant of angle A.							
Q.15.	Assertion(A): For an acute angle θ, $\sec \theta = 3 \Rightarrow \tan \theta = 2\sqrt{2}$ Reason(R): $\sec^2 \theta = 1 + \tan^2 \theta$ for all values of θ.							

ANSWERS													
Q.1	C	Q.2	B	Q.3	A	Q.4	B	Q.5	A	Q.6	C	Q.7	C
Q.8	A	Q.9	C	Q.10	B	Q.11	A	Q.12	B	Q.13	a	Q.14	b
Q.15.	c												