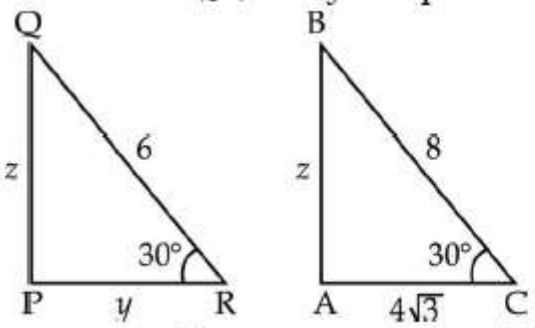
INDIAN SCHOOL AL WADI AL KABIR

Dept. of Mathematics 2021 – 2022

Class X – MCQ Work Sheet – Trigonometry (1)

(Port Folio - Submit the work sheet by 31/08/2021)

1	If $x = a\cos\theta$, $y = b\sin\theta$, then $b^2x^2 + a^2y^2 - a^2b^2$ is equal to : (A) 1 (B) -1 (C) 0 (D) 2ab
2	The value of $\sin^2 60° - \sin^2 30°$ is : (A) $\frac{1}{4}$ (B) $\frac{1}{2}$ (C) $\frac{3}{4}$ (D) $-\frac{1}{2}$
3	Given that $\sin\theta = \frac{a}{b}$, then $\tan\theta$ is equal to : (A) $\frac{b}{\sqrt{a^2+b^2}}$ (B) $\frac{b}{\sqrt{b^2-a^2}}$ (C) $\frac{a}{\sqrt{a^2-b^2}}$ (D) $\frac{a}{\sqrt{b^2-a^2}}$
4	Maximum value of $\frac{1}{\sec\theta}$, $0° < \theta < 90°$ is : (A) 1 (B) 2 (C) $\frac{1}{2}$ (D) $\frac{1}{\sqrt{2}}$
5	The value of $\frac{2\tan 30}{1+\tan^2 30°}$ (A) $\sin 60°$ (B) $\cos 60°$ (C) $\tan 60°$ (D) $\sin 30°$
6	If $\tan\theta + \cot\theta = 5$, then the value of $\tan^2\theta + \cot^2\theta$ is : (a) 23 (b) 25 (c) 27 (d) 15
7	If $\tan\theta = \cot\theta$, then the value of $\sec\theta$ is : (A) 2 (B) 1 (C) $\frac{2}{\sqrt{3}}$ (D) $\sqrt{2}$
8	If $\operatorname{cosec}\theta - \cot\theta = \frac{1}{4}$, then the value of $\operatorname{cosec}\theta + \cot\theta$ is : (A) 4 (B) $\frac{1}{4}$ (C) 1 (D) -1
9	If $A + B = 90°$; $\sin A = \frac{3}{4}$, then sec B is : (A) $\frac{3}{4}$ (B) $\frac{4}{3}$ (C) $\frac{1}{4}$ (D) $\frac{1}{3}$
10	If $x = 2\sin^2\theta$ and $y = 2\cos^2\theta + 1$ then $x + y$ is : (A) 2 (B) 3 (C) 1 (D) $\frac{1}{2}$

11	$\frac{\sin\theta}{1+\cos\theta}$ is : (A) $\frac{\cos\theta}{1-\sin\theta}$ (B) $\frac{1-\cos\theta}{\sin\theta}$ (C) $\frac{1-\sin\theta}{\cos\theta}$ (D) $\frac{1-\cos\theta}{1+\cos\theta}$
12	If $3x=\sec\theta$ and $\frac{3}{x}=\tan\theta$ then $9\left(x^2-\frac{1}{x^2}\right)$ is equal to : (A) 9 (B) 3 (C) $\frac{1}{9}$ (D) 1
13	If $\tan x=\sin45°\cos45°+\sin30°$ then x equals : (A) 45° (B) 90° (C) 30° (D) $\frac{1}{2}$
14	If A is an acute angle of a ΔABC, right angled at B, then the value of $\sin A+\cos A$ is (A) equal to one (B) greater than one (C) less than one (D) equal to two
15	If $\Delta ABC \sim \Delta PQR$, then $y+z$ equals :  (A) $2+\sqrt{3}$ (B) $4+3\sqrt{3}$ (C) $4+\sqrt{3}$ (D) $3+4\sqrt{3}$
16	If $\sin\alpha=\frac{1}{2}$ and $\cos\beta=\frac{1}{2}$, then $\alpha+\beta$ is : (A) 0° (B) 30° (C) 60° (D) 90°
17	If $\tan\alpha=\sqrt{3}$ and $\tan\beta=\frac{1}{\sqrt{3}}$, $0<\alpha,\beta<90°$ then the value of $\cot(\alpha+\beta)$ is : (A) $\sqrt{3}$ (B) 0 (C) $\frac{1}{\sqrt{3}}$ (D) 1
18	In a right triangle ABC, $AB=6\sqrt{3}$ cm, BC = 6 cm and AC = 12 cm. $\angle A$ is given by (A) 90° (B) 45° (C) 30° (D) 60°
19	If $\sin\theta-\cos\theta=0$, then the value of $\sin^4\theta+\cos^4\theta$ is : (A) $\frac{1}{2}$ (B) $\frac{1}{4}$ (C) $\frac{3}{4}$ (D) 1
20	If $\tan\theta+\cot\theta=2$, then $\tan^2\theta+\cot^2\theta$ is : (A) 4 (B) 6 (C) 2 (D) 1