CBSE CLASS 10 MATHEMATICS

Introduction to Trigonometry – Chapter 8/ MCQ

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1. If tanθ =$\sqrt{3}$, then the value of $\frac{sin\theta}{cos\theta}$ is ----------

A. $\sqrt{3}$

B. $\frac{\sqrt{3}}{2}$

C. $\frac{1}{2}$

2. The value of $sin^2 60$ - $cos^2 60$ is ----------

A. 1

B. 0

C. $\frac{1}{2}$

3. The value of $sin^2 45$ + $cos^2 45$ is ----------

A. 0

B. 1

C. $\frac{\sqrt{3}}{2}$

4. The value of sin30 – cos 60 is ----------

A. 0

B. 1

C. $\frac{1}{2}$

5. If A = 30°, then cos2A is ----------

A. 1

B. $\frac{1}{2}$

C. $\frac{\sqrt{3}}{2}$

6. The value of sin30 cos60 + cos30 sin60 is -----

A. 0

B. 1

C. $\frac{1}{\sqrt{2}}$

7. Evaluate$\frac{\tan 65^\circ}{cot 25^\circ}$?

A. 0

B. 1

C. $\sqrt{3}$

8. The value of $\sin 25\,^\circ cos65^\circ + cos25^\circ sin65^\circ$ is ----------

A. $\frac{1}{2}$

B. 1

C. $\sqrt{3}$

9. $9sec^2A - 9tan^2A$ = ----------

A. 9

B. 8

C. 1

10. (Sec A + tan A) (1 – sin A) = ----------

A. sinA

B. cos A

C. sec A

ANSWERS (with explanation):

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1. $\sqrt{3}$

[Explanation: tanθ = $\sqrt{3}$

θ = 60°

$\frac{sin60°}{\cos 60°}$ = $\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}}$ = $\sqrt{3}$.]

2. 0

[Explanation: sin60° = $\frac{\sqrt{3}}{2}$ and cos30°= $\frac{\sqrt{3}}{2}$

$sin^2 60 - cos^2 30$ = 0]

3. 1

[Explanation: The value of sin45 and cos45 is$\frac{1}{\sqrt{2}}$.

$sin^2 45 + cos^2 45$ = $(\frac{1}{\sqrt{2}})^2$+$(\frac{1}{\sqrt{2}})^2$ = 1]

4. 0

[Explanation: sin30° - cos60° = $\frac{1}{2}$ - $\frac{1}{2}$ = 0]

5. $\frac{1}{2}$

[Explanation: cos2A = cos60°=$\frac{1}{2}$]

6. 1

[Explanation: $\frac{1}{2} \times \frac{1}{2} + \frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2}$ = $\frac{1}{4} + \frac{3}{4}$ = $\frac{4}{4}$ = 1]

7. 1

[Explanation: cot A = cot (90-A)

cot 25° = tan(90 – 25) = tan65°

$\frac{tan65°}{cot25°}$ = $\frac{tan65°}{tan65°}$ = 1]

8. 1

[Explanation: $\sin 25° \cos(90 - 25°) + cos25° \sin(90 - 25°)$

= $\sin 25° sin25° + cos25° cos25°$

= $sin^2 25 + cos^2 25$

= 1]

9. 9

[Explanation: $9(\frac{1}{cos^2 A} - \frac{sin^2 A}{cos^2 A})$ = $9(\frac{1 - sin^2 A}{cos^2 A})$ = $9(\frac{cos^2 A}{cos^2 A})$ = 9.]

10. cos A

[Explanation: $(\frac{1}{\cos A} + \frac{sinA}{\cos A})(1 - sinA)$= $(\frac{1 + sinA}{\cos A})$(1 –sin A)

= $\frac{1 - sin^2 A}{cosA}$ = $\frac{cos^2 A}{cosA}$ = cosA]