

Question 4

If $\cos x = \frac{-\sqrt{3}}{2}$ and $0^\circ < x < 180^\circ$, determine the value of $\sin x$.

- A. $\frac{-2}{\sqrt{3}}$ B. $\frac{1}{2}$ C. $-\frac{\sqrt{3}}{2}$ D. $-\frac{1}{2}$

Question 5

$\tan(180^\circ - x) \cdot \tan(180^\circ + x) = \dots$

- A. $-2\tan x$ B. $-\tan^2 x$ C. $\tan 2x$ D. $\tan^2 x$

Question 6

Which ONE of the following is NOT an identity?

- A. $\tan^2 \theta + \sin^2 \theta + \cos^2 \theta = (\cos^2 \theta)^{-1}$
 B. $\tan^2 \theta + (\tan^2 \theta)^{-1} + 2 = \frac{1}{\cos^2 \theta} + \frac{1}{\sin^2 \theta}$
 C. $(\tan^2 \theta)^{-1} + \sin^2 \theta = \frac{1}{\sin^2 \theta} - \cos^2 \theta$
 D. $\tan^2 \theta - \sin^2 \theta + \cos^2 \theta = (\cos^2 \theta)^{-1}$

Question 7

$\sin \theta \cdot \tan \theta + \cos \theta = \dots$

- A. $\sin^2 \theta - 1$ B. $\frac{1}{\cos \theta}$ C. $\cos^2 \theta - 1$ D. $\frac{1}{\sin \theta}$

Question 8

The function $y = \tan bx$ is undefined for $x = \mp 30^\circ$ and $x = \mp 90^\circ$, $x \in [-90^\circ; 90^\circ]$. What is the value of b ?

- A. 1 B. $\frac{1}{2}$ C. 3 D. 2

Question 9

$\frac{\cos(180^\circ - A)}{\sin(90^\circ - A)} = \dots$

- A. -1 B. $-\tan A$ C. 1 D. $\frac{1}{-\tan A}$

Question 10

The sign of $\sin A$ is the same as the sign of $\cos A$, but opposite to the sign of $\tan A$. Which statement is true?

- A. $0^\circ < A < 90^\circ$ B. $90^\circ < A < 180^\circ$
 C. $180^\circ < A < 270^\circ$ D. $270^\circ < A < 360^\circ$



Improve your Skills

Question 1

Prove the identity:

$$\left(\frac{1}{\cos A} - \cos A\right)^2 = \tan^2 A - \sin^2 A$$

notes for...

Question 2

Prove the identity:

$$\frac{\sin(x - 180^\circ) \cdot \tan(360^\circ + x)}{\tan(-x) \cdot \left[\tan^2(180^\circ - y) - \frac{1}{\cos^2(180^\circ + y)} \right]} = -\sin x$$

Question 3

Prove the identity:

$$\frac{\cos x}{\sin x - 1} - \frac{1}{\tan x - \frac{1}{\sin x \cdot \cos x}} = -\frac{1}{\cos x}$$