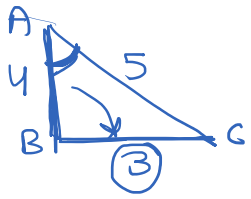
Trigonometry MCQ

Saturday, January 20, 2024 8:22 PM

Choose the correct answer from the given four options:



1. If $\cos A = \frac{4}{5}$, then the value of $\tan A$ is

(A) $\frac{3}{5}$ (B) $\frac{3}{4}$ (C) $\frac{4}{3}$ (D) $\frac{5}{3}$

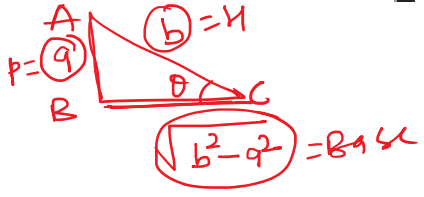
2. If $\sin A = \frac{1}{2}$, then the value of $\cot A$ is

(A) $\sqrt{3}$ (B) $\frac{1}{\sqrt{3}}$ (C) $\frac{\sqrt{3}}{2}$ (D) 1

3. The value of the expression $[\text{cosec}\,(75° + \theta) - \sec(15° - \theta) - \tan(55° + \theta) + \cot(35° - \theta)]$ is

(A) -1 (B) 0 (C) 1 (D) $\frac{3}{2}$

4. Given that $\sin\theta = \frac{a}{b}$, then $\cos\theta$ is equal to



(A) $\frac{b}{\sqrt{b^2 - a^2}}$ (B) $\frac{b}{a}$ (C) $\frac{\sqrt{b^2 - a^2}}{b}$ (D) $\frac{a}{\sqrt{b^2 - a^2}}$

5. If $\cos(\alpha + \beta) = 0$, then $\sin(\alpha - \beta)$ can be reduced to

(A) $\cos\beta$ (B) $\cos 2\beta$ (C) $\sin\alpha$ (D) $\sin 2\alpha$

6. The value of $(\tan 1° \tan 2° \tan 3° \ldots \tan 89°)$ is

(A) 0 (B) 1 (C) 2 (D) $\frac{1}{2}$

7. If $\cos 9\alpha = \sin\alpha$ and $9\alpha < 90°$, then the value of $\tan 5\alpha$ is

β or $\beta = 90 - \alpha$

7. If $\cos 9\alpha = \sin\alpha$ and $9\alpha < 90°$, then the value of $\tan 5\alpha$ is

(A) $\frac{1}{\sqrt{3}}$ (B) $\sqrt{3}$ (C) 1 (D) 0

8. If ΔABC is right angled at C, then the value of $\cos(A+B)$ is

(A) 0 (B) 1 (C) $\frac{1}{2}$ (D) $\frac{\sqrt{3}}{2}$

9. If $\sin A + \sin^2 A = 1$, then the value of the expression $(\cos^2 A + \cos^4 A)$ is

(A) 1 (B) $\frac{1}{2}$ (C) 2 (D) 3

10. Given that $\sin\alpha = \frac{1}{2}$ and $\cos\beta = \frac{1}{2}$, then the value of $(\alpha+\beta)$ is

(A) 0° (B) 30° (C) 60° (D) 90°

11. The value of the expression $\left[\frac{\sin^2 22° + \sin^2 68°}{\cos^2 22° + \cos^2 68°} + \sin^2 63° + \cos 63° \sin 27°\right]$ is

(A) 3 (B) 2 (C) 1 (D) 0

12. If $4\tan\theta = 3$, then $\left(\frac{4\sin\theta - \cos\theta}{4\sin\theta + \cos\theta}\right)$ is equal to

(A) $\frac{2}{3}$ (B) $\frac{1}{3}$ (C) $\frac{1}{2}$ (D) $\frac{3}{4}$

13. If $\sin\theta - \cos\theta = 0$, then the value of $(\sin^4\theta + \cos^4\theta)$ is

(A) 1 (B) $\frac{3}{4}$ (C) $\frac{1}{2}$ (D) $\frac{1}{4}$

14. $\sin(45° + \theta) - \cos(45° - \theta)$ is equal to

(A) $2\cos\theta$ (B) 0 (C) $2\sin\theta$ (D) 1

15. A pole 6 m high casts a shadow $2\sqrt{3}$ m long on the ground, then the Sun's

$1 + 1 = 2$

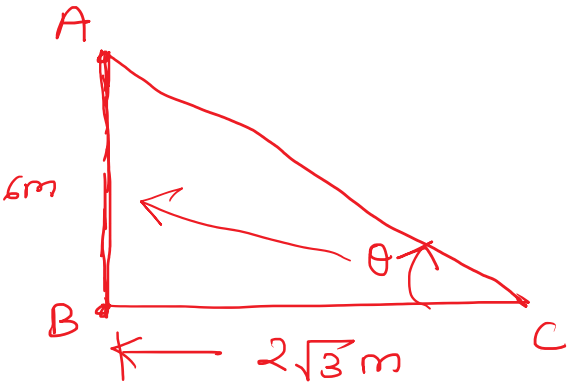
(A) (B) (C) (D)

V. imp

15. A pole 6 m high casts a shadow $2\sqrt{3}$ m long on the ground, then the Sun's elevation is

(A) 60° (B) 45° (C) 30° (D) 90°

Sol:-



$\tan\theta = \frac{P}{B}$

$\tan\theta = \frac{6}{2\sqrt{3}}$

$\tan\theta = \frac{\sqrt{3}\sqrt{3}}{\sqrt{3}}$

$\sin\theta = \sqrt{3}$

$\boxed{\theta = 60^\circ}$ Ans.