Foundation

Udaan 2025
Maths
Trigonometry

Time Taken = 36 Minutes
Score = 36/36

DHA: 1

Q 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) $\frac{5}{3}$

Q 2 If $\sin\theta = \frac{a}{b}$, 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) $\frac{a}{\sqrt{b^2-a^2}}$

Q 3 If $\alpha \sin A = 5$ and $7\,\text{cosec}\, A = 6\sec A$, then the value of α is

(A) $\frac{46}{45}$

(B) $\frac{46}{7}$

(C) $\frac{49}{46}$

(D) None of these

Q 4 If $b\tan\theta = a$, then the value of $\frac{a\sin\theta - b\cos\theta}{a\sin\theta + b\cos\theta}$ is equal to

(A) $\frac{a-b}{a^2+b^2}$

(B) $\frac{a+b}{a^2+b^2}$

(C) $\frac{a^2+b^2}{a^2-b^2}$

(D) $\frac{a^2-b^2}{a^2+b^2}$

Q 5 In a right triangle ABC, right angled at B, the ratio of AB to AC is $1:\sqrt{2}$, then the value of $\frac{2\tan A}{1+\tan^2 A}$ is

(A) 0 (B) 2

(C) 3 (D) 1

Q 6 In $\triangle ABC$ right angle at B, $BC = 5$ cm and $AC - AB = 1$ cm, then $\frac{1+\sin C}{\cos C} =$

(A) 5 (B) 4

(C) $\frac{1}{5}$ (D) $\frac{1}{4}$

Q 7 In $\triangle ABC$, right-angle at C, if $\tan A = \frac{1}{\sqrt{3}}$, then $\sin A\cos B + \cos A\sin B$ is equal to

(A) 1 (B) $\frac{1}{2}$

(C) $\frac{2}{3}$ (D) 0

Q 8 In $\triangle PQR$, if $\angle R = 90^\circ$ and $\sin Q = \frac{1}{2}$, then $3\cos Q - 4\cos^3 Q$ is equal to

(A) 1 (B) $\frac{1}{2}$

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

Q 9 In $\triangle ACB$ right-angle at C, $AB = 29$ units, $BC = 21$ units and $\angle ABC = \theta$. The value of $\cos^2\theta + \sin^2\theta$ is equal to

(A) 0 (B) 2

(C) 1 (D) $\frac{1}{2}$

Answer Key

Q1	**B**
Q2	**C**
Q3	**B**
Q4	**D**
Q5	**D**
Q6	**A**
Q7	**A**
Q8	**D**
Q9	**C**

Hints & Solutions

Q 1 **Text Solution:**

$\frac{3}{4}$

Video Solution:

Q 2 **Text Solution:**

$\frac{\sqrt{b^2-a^2}}{b}$

Video Solution:

Q 3 **Text Solution:**

$\frac{46}{7}$ (Approximately)

Video Solution:

Q 4 **Text Solution:**

$\frac{a^2-b^2}{a^2+b^2}$

Video Solution:

Q 5 **Text Solution:**

One

Video Solution:

Q 6 **Text Solution:**

Five

Video Solution:

Q 7 **Text Solution:**

One

Video Solution:

Q 8 **Text Solution:**

Zero

Video Solution:

Q 9 **Text Solution:**

One

Video Solution: