

Q1. In a triangle ABC, right angled at A, if AB = 12, AC = 5 and BC = 13, find all the six trigonometric ratios of angle B.

Q2. In a triangle ABC, right angled at B, if AB = 4, BC = 3, find all the six trigonometric ratios of angle A.

Q3. In a triangle ABC, right angled at B, if AB = 24 cm, BC = 7 cm. Determine :

(i) Sin A , Cos A

Ans.  $\sin A = \frac{7}{25}$  ,  $\cos A = \frac{24}{25}$

(ii) Sin C , Cos C

Ans.  $\sin C = \frac{24}{25}$  ,  $\cos C = \frac{7}{25}$

Q4. In a triangle PQR, right angled at Q, if PQ = 12 cm, QR = 5 cm. Determine :

(i) Sin P , Cos P

Ans.  $\sin P = \frac{5}{13}$  ,  $\cos P = \frac{12}{13}$

(ii) Sin R , Cos R

Ans.  $\sin R = \frac{12}{13}$  ,  $\cos R = \frac{5}{13}$

Q5. In a triangle ABC, right angled at C, if AB = 29 units, BC = 21 units and  $\angle ABC = \theta$ . Determine :

(i)  $\cos^2 \theta + \sin^2 \theta$

Ans. (i) 1 (ii)  $\frac{41}{841}$

(ii)  $\cos^2 \theta - \sin^2 \theta$

Q6. In a triangle PQR, right angled at Q, if PQ = 12 cm, PR = 13 cm. Find  $\tan P - \cot R$ .

Ans. 0

Q7. If  $\sin A = \frac{3}{4}$ , Calculate cos A and tan A.

Ans.  $\cos A = \frac{\sqrt{7}}{4}$  ,  $\tan A = \frac{3}{\sqrt{7}}$

Q8. Given that  $\tan \theta = \frac{4}{3}$ , Calculate all other trigonometric ratios of angle  $\theta$ .

Q9. Given that  $\sec \theta = \frac{13}{12}$ , Calculate all other trigonometric ratios.

Q10. Given  $15 \cot A = 8$ , find sin A and sec A.

Ans.  $\sin A = \frac{15}{17}$  and  $\sec A = \frac{17}{8}$

Q11. If  $24 \cot A = 7$ , find the value of Sin A.

Ans.  $\sin A = \frac{24}{25}$

Q12. If  $5 \sin \alpha = 3$ , then find the value of sec  $\alpha$ .

Ans.  $\sec \alpha = \frac{5}{4}$

Q13. If  $5 \cos \theta = 4$ , then find the value of  $\frac{2 \sin \theta - 5 \cos \theta}{\sin \theta}$ .

Ans.  $-\frac{14}{3}$

Q14. If  $5 \tan \theta = 4$ , then find the value of  $\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 2 \cos \theta}$ .

Ans.  $\frac{1}{6}$

Q15. If  $3 \cot A = 4$ , then find the value of  $\frac{\operatorname{cosec}^2 A + 1}{\operatorname{cosec}^2 A - 1}$ .

Ans.  $\frac{17}{8}$

Q16. If  $3 \operatorname{Cot} A = 4$ , check whether  $\frac{1-\tan^2 A}{1+\tan^2 A} = \cos^2 A - \sin^2 A$  or not.

Q17. If  $\cot A = \frac{7}{8}$ , evaluate : (i)  $\sin A \cos A$  (ii)  $\frac{(1+\sin A)(1-\sin A)}{(1+\cos A)(1-\cos A)}$  (iii)  $\cot^2 A$  Ans. (i)  $\frac{56}{113}$  (ii)  $\frac{49}{64}$  (iii)  $\frac{49}{64}$

Q18. If  $\cot \theta = \frac{15}{8}$ , evaluate  $\frac{(2+2\sin \theta)(1-\sin \theta)}{(1+\cos \theta)(2-2\cos \theta)}$ .

Ans.  $\frac{225}{64}$

Q19. If  $\cos \theta = \frac{2}{3}$ , then find the value of  $2 \sec^2 \theta + 2 \tan^2 \theta - 7$ .

Ans. 0

Q20. If  $\tan \theta = \frac{1}{\sqrt{3}}$ , then find the value of  $\frac{\operatorname{cosec}^2 \theta - \sin^2 \theta}{\operatorname{cosec}^2 \theta + \sin^2 \theta}$

Ans.  $\frac{15}{17}$