Introduction to Trigonometry : Worksheet -7

1. $\frac{\sin\alpha}{1+\cos\alpha}+\frac{1+\cos\alpha}{\sin\alpha}$ = 2x, then x = [ ]

a) sinα b) cosα c) cosecα d) secα

2. $\frac{1+\cos\theta-\sin^2\theta}{\sin\theta(1+\cos\theta)}$ = [ ]

a) tanθ b) secθ c) sinθ d) cotθ

3. $\sec^2A + \operatorname{cosec}^2A = k.\ \sec^2A\ \operatorname{cosec}^2A$, then $\frac{1}{k}$ = [ ]

a) 1 b) ½ c) 1/3 d) ¼

4. (cosecθ - sinθ) (secθ - cosθ) (tanθ + cotθ) = k, then 2k = [ ]

a) 1 b) 2 c) 3 d) 4

5. $2(\sin^6x + \cos^6x) - 3(\sin^4x + \cos^4x) + 1$ = [ ]

a) 1 b) 2 c) 0 d) – 1

6. $3(\sin x - \cos x)^4 + 6(\sin x + \cos x)^2 + 4(\sin^6x + \cos^6x)$ = [ ]

a) 10 b) 12 c) 11 d) 13

7. $\frac{\tan^3\theta}{1+\tan^2\theta}+\frac{\cot^3\theta}{1+\cot^2\theta}=\frac{1-k\sin^2\theta.\cos^2\theta}{\sin\theta.\cos\theta}$; then k = [ ]

a) 1 b) 2 c) 3 d) 4

8. $\frac{\sin^3A+\cos^3A}{\sin A+\cos A}+\frac{\sin^3A-\cos^3A}{\sin A-\cos A}$ = [ ]

a) 1 b) – 2 c) 2 d) – 2

9. $\frac{2\sin\theta.\cos\theta-\cos\theta}{1-\sin\theta+\sin^2\theta-\cos^2\theta}$ = [ ]

a) tanθ b) cotθ c) secθ d) cosecθ

10. $\frac{1-\sin A\cos A}{\cos A(\sec A-\operatorname{cosec} A)}\cdot\frac{\sin^2A-\cos^2A}{\sin^3A+\cos^3A}$ = [ ]

a) sinA b) cosA c) tanA d) cotA