

IDYA SHREE ACADE



An English Medium Co.Ed. School | Science & Commerce

W: www.vsajaipur.com | E: vsajaipur@gmail.com M.: +91 9460356652, 8058999828 Add.: 84, Krishna Vihar, Behind Narayan Niwas, Gopalpura Bypass, Jaipur - 302015





Subject - Maths.

Class- 10th

Topic – Ch. 7 Trigonometric Identities

Refer to Video #11 & 12 and solve the following exercise:

EXERCISE 7.2

Find the values of the following:

- 1. (i) $\frac{\cos 37^{\circ}}{\sin 53^{\circ}}$
- (ii) $\frac{\csc 32^{\circ}}{\sec 58^{\circ}}$
- (iii) $\frac{\tan 10^{\circ}}{\cot 80^{\circ}}$
- (iv) $\frac{\cos 19^{\circ}}{\sin 71^{\circ}}$
- 2. (i) cosec 25° sec 65°
 - (ii) cot 34° tan 56°
 - (iii) $\frac{\sin 36^{\circ}}{\cos 54^{\circ}} \frac{\sin 54^{\circ}}{\cos 36^{\circ}}$
 - (iv) $\sin \theta \cos (90^{\circ} \theta) + \cos \theta \sin (90^{\circ} \theta)$
- 3. (i) sin 70° sin 20° cos 20° cosec 70°
 - (ii) $\frac{2\cos 67^{\circ}}{\sin 23^{\circ}} \frac{\tan 40^{\circ}}{\cot 50^{\circ}} \cos 60^{\circ}$
- 4. (i) $\left(\frac{\sin 35^{\circ}}{\cos 55^{\circ}}\right)^{2} \div \left(\frac{\cos 55^{\circ}}{\sin 35^{\circ}}\right)^{2} 2 \cos 60^{\circ}$
 - (ii) $\left(\frac{\sin 27^{\circ}}{\cos 63^{\circ}}\right)^2 + \left(\frac{\cos 63^{\circ}}{\sin 27^{\circ}}\right)^2$
- 5. (i) tan 12° cot 38° cot 52° cot 60° cot 78°
 - (ii) tan 5° tan 25° tan 30° tan 65° tan 85°
- 6. Express the following in terms of the trigonometric ratios of angles between 0° and 45°.
 - (i) sin 81° + sin 71°
 - (ii) tan 68° + sec 68°

Prove the following:

- 7. $\sin 65^{\circ} + \cos 25^{\circ} = 2 \cos 25^{\circ}$
- 8. $\sin 35^{\circ} \sin 55^{\circ} \cos 35^{\circ} \cos 55^{\circ} = 0$
- 9. $\frac{\cos 70^{\circ}}{\sin 20^{\circ}} + \frac{\cos 59^{\circ}}{\sin 31^{\circ}} 8 \sin^2 30^{\circ} = 0$
- 10. $\sin (90^{\circ} \theta) \cos (90^{\circ} \theta) = \frac{\tan \theta}{1 + \tan^2 \theta}$
- 11. $\frac{\cos(90^\circ \theta)\cos\theta}{\tan\theta} + \cos^2(90^\circ \theta) = 1$
- 12. $\frac{\tan(90^\circ \theta)\cot\theta}{\cos e^2\theta} \cos^2\theta = 0$
- 13. $\frac{\cos(90^\circ \theta)\sin(90^\circ \theta)}{\tan(90^\circ \theta)} = \sin^2\theta$
- 14. $\frac{\sin\theta\cos(90^{\circ} \theta)\cos\theta}{\sec(90^{\circ} \theta)} + \frac{\cos\theta\sin(90^{\circ} \theta)\sin\theta}{\csc(90^{\circ} \theta)}$ $= \sin\theta\cos\theta$
- 15. If $\sin 3\theta = \cos (\theta 6^{\circ})$ where 3θ and $(\theta 6^{\circ})$ are acute angles then find the value of θ .
- 16. If $\sec 5\theta = \csc (\theta 36^{\circ})$ where 5θ is an acute angle then find the value of θ .