

EduSahara™ Learning Center Assignment

Grade : Class X, SSC

Chapter : Trigonometry

Name : Trigonometric ratios in terms of other ratios

1. Express $\sin \theta$ in terms of $\cos \theta$

$$(i) \sqrt{1 - \cos^2 \theta} \quad (ii) \frac{1}{\cos \theta} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 \theta}}$$

$$(iv) \frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}} \quad (v) \frac{\sqrt{1 - \cos^2 \theta}}{\cos \theta}$$

2. Express $\sin \theta$ in terms of $\tan \theta$

$$(i) \sqrt{1 + \tan^2 \theta} \quad (ii) \frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta} \quad (iii) \frac{1}{\tan \theta}$$

$$(iv) \frac{\tan \theta}{\sqrt{1 + \tan^2 \theta}} \quad (v) \frac{1}{\sqrt{1 + \tan^2 \theta}}$$

3. Express $\sin \theta$ in terms of $\cot \theta$

$$(i) \frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta} \quad (ii) \frac{1}{\cot \theta} \quad (iii) \frac{\cot \theta}{\sqrt{1 + \cot^2 \theta}}$$

$$(iv) \sqrt{1 + \cot^2 \theta} \quad (v) \frac{1}{\sqrt{1 + \cot^2 \theta}}$$

4. Express $\sin \theta$ in terms of $\sec \theta$

$$(i) \frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta} \quad (ii) \sqrt{\sec^2 \theta - 1} \quad (iii) \frac{1}{\sqrt{\sec^2 \theta - 1}}$$

$$(iv) \frac{1}{\sec \theta} \quad (v) \frac{\sec \theta}{\sqrt{\sec^2 \theta - 1}}$$

5. Express $\sin \theta$ in terms of $\operatorname{cosec} \theta$

$$(i) \frac{\sqrt{\operatorname{cosec}^2 \theta - 1}}{\operatorname{cosec} \theta} \quad (ii) \sqrt{\operatorname{cosec}^2 \theta - 1} \quad (iii) \frac{\operatorname{cosec} \theta}{\sqrt{\operatorname{cosec}^2 \theta - 1}}$$

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$$\sqrt{2\theta - 1}$$

$$(iv) \frac{1}{\operatorname{cosec} \theta} \quad (v) \frac{1}{\sqrt{\operatorname{cosec}^2 \theta - 1}}$$

6. Express $\cos \theta$ in terms of $\sin \theta$

$$(i) \frac{1}{\sin \theta} \quad (ii) \frac{\sin \theta}{\sqrt{1 - \sin^2 \theta}} \quad (iii) \sqrt{1 - \sin^2 \theta}$$

$$(iv) \frac{1}{\sqrt{1 - \sin^2 \theta}} \quad (v) \frac{\sqrt{1 - \sin^2 \theta}}{\sin \theta}$$

7. Express $\cos \theta$ in terms of $\tan \theta$

$$(i) \frac{1}{\sqrt{1 + \tan^2 \theta}} \quad (ii) \frac{1}{\tan \theta} \quad (iii) \sqrt{1 + \tan^2 \theta}$$

$$(iv) \frac{\tan \theta}{\sqrt{1 + \tan^2 \theta}} \quad (v) \frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta}$$

8. Express $\cos \theta$ in terms of $\cot \theta$

$$(i) \frac{\cot \theta}{\sqrt{1 + \cot^2 \theta}} \quad (ii) \frac{1}{\sqrt{1 + \cot^2 \theta}} \quad (iii) \sqrt{1 + \cot^2 \theta}$$

$$(iv) \frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta} \quad (v) \frac{1}{\cot \theta}$$

9. Express $\cos \theta$ in terms of $\sec \theta$

$$(i) \frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta} \quad (ii) \frac{1}{\sec \theta} \quad (iii) \sqrt{\sec^2 \theta - 1}$$

$$(iv) \frac{1}{\sqrt{\sec^2 \theta - 1}} \quad (v) \frac{\sec \theta}{\sqrt{\sec^2 \theta - 1}}$$

10. Express $\cos \theta$ in terms of $\operatorname{cosec} \theta$

$$(i) \frac{\operatorname{cosec} \theta}{\operatorname{cosec}} \quad (ii) \frac{\sqrt{\operatorname{cosec}^2 \theta - 1}}{\operatorname{cosec}} \quad (iii) \frac{1}{\operatorname{cosec}}$$

$$\sqrt{2\theta - 1} \quad \theta \quad \theta$$

$$(iv) \frac{1}{\sqrt{\operatorname{cosec}^2 \theta - 1}} \quad (v) \sqrt{\operatorname{cosec}^2 \theta - 1}$$

11. Express $\tan \theta$ in terms of $\sin \theta$

$$(i) \sqrt{1 - \sin^2 \theta} \quad (ii) \frac{1}{\sin \theta} \quad (iii) \frac{\sin \theta}{\sqrt{1 - \sin^2 \theta}}$$

$$(iv) \frac{1}{\sqrt{1 - \sin^2 \theta}} \quad (v) \frac{\sqrt{1 - \sin^2 \theta}}{\sin \theta}$$

12. Express $\tan \theta$ in terms of $\cos \theta$

$$(i) \frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}} \quad (ii) \frac{1}{\cos \theta} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 \theta}}$$

$$(iv) \frac{\sqrt{1 - \cos^2 \theta}}{\cos \theta} \quad (v) \sqrt{1 - \cos^2 \theta}$$

13. Express $\tan \theta$ in terms of $\cot \theta$

$$(i) \sqrt{1 + \cot^2 \theta} \quad (ii) \frac{1}{\sqrt{1 + \cot^2 \theta}} \quad (iii) \frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta}$$

$$(iv) \frac{1}{\cot \theta} \quad (v) \frac{\cot \theta}{\sqrt{1 + \cot^2 \theta}}$$

14. Express $\tan \theta$ in terms of $\sec \theta$

$$(i) \sqrt{\sec^2 \theta - 1} \quad (ii) \frac{1}{\sqrt{\sec^2 \theta - 1}} \quad (iii) \frac{1}{\sec \theta}$$

$$(iv) \frac{\sec \theta}{\sqrt{\sec^2 \theta - 1}} \quad (v) \frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta}$$

15. Express $\tan \theta$ in terms of $\operatorname{cosec} \theta$

$$(i) \frac{\sqrt{\operatorname{cosec}^2 \theta - 1}}{\operatorname{cosec} \theta} \quad (ii) \sqrt{\operatorname{cosec}^2 \theta - 1} \quad (iii) \frac{\operatorname{cosec} \theta}{\operatorname{cosec} \theta}$$

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$$\sqrt{2\theta - 1}$$

$$(iv) \frac{1}{\operatorname{cosec} \theta} \quad (v) \frac{1}{\sqrt{\operatorname{cosec}^2 \theta - 1}}$$

16. Express $\cot \theta$ in terms of $\sin \theta$

$$(i) \frac{\sin \theta}{\sqrt{1 - \sin^2 \theta}} \quad (ii) \frac{1}{\sqrt{1 - \sin^2 \theta}} \quad (iii) \frac{1}{\sin \theta}$$

$$(iv) \sqrt{1 - \sin^2 \theta} \quad (v) \frac{\sqrt{1 - \sin^2 \theta}}{\sin \theta}$$

17. Express $\cot \theta$ in terms of $\cos \theta$

$$(i) \sqrt{1 - \cos^2 \theta} \quad (ii) \frac{\sqrt{1 - \cos^2 \theta}}{\cos \theta} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 \theta}}$$

$$(iv) \frac{1}{\cos \theta} \quad (v) \frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}}$$

18. Express $\cot \theta$ in terms of $\tan \theta$

$$(i) \sqrt{1 + \tan^2 \theta} \quad (ii) \frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta} \quad (iii) \frac{1}{\sqrt{1 + \tan^2 \theta}}$$

$$(iv) \frac{\tan \theta}{\sqrt{1 + \tan^2 \theta}} \quad (v) \frac{1}{\tan \theta}$$

19. Express $\cot \theta$ in terms of $\sec \theta$

$$(i) \frac{\sec \theta}{\sqrt{\sec^2 \theta - 1}} \quad (ii) \sqrt{\sec^2 \theta - 1} \quad (iii) \frac{1}{\sec \theta}$$

$$(iv) \frac{1}{\sqrt{\sec^2 \theta - 1}} \quad (v) \frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta}$$

20. Express $\cot \theta$ in terms of $\operatorname{cosec} \theta$

$$(i) \frac{1}{\operatorname{cosec} \theta} \quad (ii) \frac{\operatorname{cosec} \theta}{\operatorname{cosec} \theta} \quad (iii) \frac{1}{\operatorname{cosec} \theta}$$

$$\theta \quad \sqrt{2\theta - 1} \quad \sqrt{2\theta - 1}$$

$$(iv) \frac{\sqrt{\operatorname{cosec}^2 \theta - 1}}{\operatorname{cosec} \theta} \quad (v) \sqrt{\operatorname{cosec}^2 \theta - 1}$$

21. Express $\sec \theta$ in terms of $\sin \theta$

$$(i) \frac{\sin \theta}{\sqrt{1 - \sin^2 \theta}} \quad (ii) \frac{1}{\sqrt{1 - \sin^2 \theta}} \quad (iii) \frac{1}{\sin \theta}$$

$$(iv) \sqrt{1 - \sin^2 \theta} \quad (v) \frac{\sqrt{1 - \sin^2 \theta}}{\sin \theta}$$

22. Express $\sec \theta$ in terms of $\cos \theta$

$$(i) \frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}} \quad (ii) \sqrt{1 - \cos^2 \theta} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 \theta}}$$

$$(iv) \frac{\sqrt{1 - \cos^2 \theta}}{\cos \theta} \quad (v) \frac{1}{\cos \theta}$$

23. Express $\sec \theta$ in terms of $\tan \theta$

$$(i) \frac{1}{\sqrt{1 + \tan^2 \theta}} \quad (ii) \frac{1}{\tan \theta} \quad (iii) \sqrt{1 + \tan^2 \theta}$$

$$(iv) \frac{\tan \theta}{\sqrt{1 + \tan^2 \theta}} \quad (v) \frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta}$$

24. Express $\sec \theta$ in terms of $\cot \theta$

$$(i) \frac{1}{\cot \theta} \quad (ii) \frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta} \quad (iii) \frac{1}{\sqrt{1 + \cot^2 \theta}}$$

$$(iv) \frac{\cot \theta}{\sqrt{1 + \cot^2 \theta}} \quad (v) \sqrt{1 + \cot^2 \theta}$$

25. Express $\sec \theta$ in terms of $\operatorname{cosec} \theta$

$$(i) \frac{1}{\operatorname{cosec} \theta} \quad (ii) \sqrt{\operatorname{cosec}^2 \theta - 1} \quad (iii) \frac{\sqrt{\operatorname{cosec}^2 \theta - 1}}{\operatorname{cosec} \theta}$$

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$$(iv) \frac{1}{\sqrt{\operatorname{cosec}^2 \theta - 1}} \quad (v) \frac{\operatorname{cosec} \theta}{\sqrt{\operatorname{cosec}^2 \theta - 1}}$$

26. Express $\operatorname{cosec} \theta$ in terms of $\sin \theta$

$$(i) \frac{\sin \theta}{\sqrt{1 - \sin^2 \theta}} \quad (ii) \sqrt{1 - \sin^2 \theta} \quad (iii) \frac{1}{\sqrt{1 - \sin^2 \theta}}$$

$$(iv) \frac{\sqrt{1 - \sin^2 \theta}}{\sin \theta} \quad (v) \frac{1}{\sin \theta}$$

27. Express $\operatorname{cosec} \theta$ in terms of $\cos \theta$

$$(i) \frac{\sqrt{1 - \cos^2 \theta}}{\cos \theta} \quad (ii) \frac{1}{\cos \theta} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 \theta}}$$

$$(iv) \frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}} \quad (v) \sqrt{1 - \cos^2 \theta}$$

28. Express $\operatorname{cosec} \theta$ in terms of $\tan \theta$

$$(i) \frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta} \quad (ii) \frac{\tan \theta}{\sqrt{1 + \tan^2 \theta}} \quad (iii) \frac{1}{\tan \theta}$$

$$(iv) \frac{1}{\sqrt{1 + \tan^2 \theta}} \quad (v) \sqrt{1 + \tan^2 \theta}$$

29. Express $\operatorname{cosec} \theta$ in terms of $\cot \theta$

$$(i) \frac{1}{\sqrt{1 + \cot^2 \theta}} \quad (ii) \frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta} \quad (iii) \sqrt{1 + \cot^2 \theta}$$

$$(iv) \frac{1}{\cot \theta} \quad (v) \frac{\cot \theta}{\sqrt{1 + \cot^2 \theta}}$$

30. Express $\operatorname{cosec} \theta$ in terms of $\sec \theta$

$$(i) \frac{1}{\sec} \quad (ii) \frac{\sqrt{\sec^2 \theta - 1}}{\sec} \quad (iii) \frac{1}{\sec}$$

$$\sqrt{2\theta - 1} \quad \theta \quad \theta$$

$$(iv) \frac{\sec \theta}{\sqrt{\sec^2 \theta - 1}} \quad (v) \sqrt{\sec^2 \theta - 1}$$

31. Express $\sin 64^\circ$ in terms of $\cos 64^\circ$

$$(i) \frac{1}{\sqrt{1 - \cos^2 64^\circ}} \quad (ii) \frac{\sqrt{1 - \cos^2 64^\circ}}{\cos 64^\circ} \quad (iii) \frac{\cos 64^\circ}{\sqrt{1 - \cos^2 64^\circ}}$$

$$(iv) \frac{1}{\cos 64^\circ} \quad (v) \sqrt{1 - \cos^2 64^\circ}$$

32. Express $\sin 57^\circ$ in terms of $\tan 57^\circ$

$$(i) \frac{1}{\sqrt{1 + \tan^2 57^\circ}} \quad (ii) \frac{1}{\tan 57^\circ} \quad (iii) \sqrt{1 + \tan^2 57^\circ}$$

$$(iv) \frac{\tan 57^\circ}{\sqrt{1 + \tan^2 57^\circ}} \quad (v) \frac{\sqrt{1 + \tan^2 57^\circ}}{\tan 57^\circ}$$

33. Express $\sin 28^\circ$ in terms of $\cot 28^\circ$

$$(i) \sqrt{1 + \cot^2 28^\circ} \quad (ii) \frac{1}{\cot 28^\circ} \quad (iii) \frac{\sqrt{1 + \cot^2 28^\circ}}{\cot 28^\circ}$$

$$(iv) \frac{\cot 28^\circ}{\sqrt{1 + \cot^2 28^\circ}} \quad (v) \frac{1}{\sqrt{1 + \cot^2 28^\circ}}$$

34. Express $\sin 50^\circ$ in terms of $\sec 50^\circ$

$$(i) \frac{\sec 50^\circ}{\sqrt{\sec^2 50^\circ - 1}} \quad (ii) \frac{1}{\sec 50^\circ} \quad (iii) \sqrt{\sec^2 50^\circ - 1}$$

$$(iv) \frac{1}{\sqrt{\sec^2 50^\circ - 1}} \quad (v) \frac{\sqrt{\sec^2 50^\circ - 1}}{\sec 50^\circ}$$

35. Express $\sin 30^\circ$ in terms of $\operatorname{cosec} 30^\circ$

$$(i) \frac{\operatorname{cosec} 30^\circ}{\operatorname{cosec}} \quad (ii) \sqrt{\operatorname{cosec}^2 30^\circ - 1} \quad (iii) \frac{1}{\operatorname{cosec}}$$

$$\sqrt{230^\circ - 1}$$

$$\sqrt{230^\circ - 1}$$

$$(iv) \frac{\sqrt{\operatorname{cosec}^2 30^\circ - 1}}{\operatorname{cosec} 30^\circ} \quad (v) \frac{1}{\operatorname{cosec} 30^\circ}$$

36. Express $\cos 61^\circ$ in terms of $\sin 61^\circ$

$$(i) \frac{\sqrt{1 - \sin^2 61^\circ}}{\sin 61^\circ} \quad (ii) \frac{1}{\sin 61^\circ} \quad (iii) \sqrt{1 - \sin^2 61^\circ}$$

$$(iv) \frac{1}{\sqrt{1 - \sin^2 61^\circ}} \quad (v) \frac{\sin 61^\circ}{\sqrt{1 - \sin^2 61^\circ}}$$

37. Express $\cos 29^\circ$ in terms of $\tan 29^\circ$

$$(i) \frac{\sqrt{1 + \tan^2 29^\circ}}{\tan 29^\circ} \quad (ii) \frac{1}{\tan 29^\circ} \quad (iii) \sqrt{1 + \tan^2 29^\circ}$$

$$(iv) \frac{\tan 29^\circ}{\sqrt{1 + \tan^2 29^\circ}} \quad (v) \frac{1}{\sqrt{1 + \tan^2 29^\circ}}$$

38. Express $\cos 41^\circ$ in terms of $\cot 41^\circ$

$$(i) \frac{1}{\sqrt{1 + \cot^2 41^\circ}} \quad (ii) \sqrt{1 + \cot^2 41^\circ} \quad (iii) \frac{1}{\cot 41^\circ}$$

$$(iv) \frac{\cot 41^\circ}{\sqrt{1 + \cot^2 41^\circ}} \quad (v) \frac{\sqrt{1 + \cot^2 41^\circ}}{\cot 41^\circ}$$

39. Express $\cos 46^\circ$ in terms of $\sec 46^\circ$

$$(i) \frac{1}{\sec 46^\circ} \quad (ii) \frac{1}{\sqrt{\sec^2 46^\circ - 1}} \quad (iii) \frac{\sec 46^\circ}{\sqrt{\sec^2 46^\circ - 1}}$$

$$(iv) \frac{\sqrt{\sec^2 46^\circ - 1}}{\sec 46^\circ} \quad (v) \sqrt{\sec^2 46^\circ - 1}$$

40. Express $\cos 65^\circ$ in terms of $\operatorname{cosec} 65^\circ$

$$(i) \frac{\operatorname{cosec} 65^\circ}{\operatorname{cosec}} \quad (ii) \frac{\sqrt{\operatorname{cosec}^2 65^\circ - 1}}{\operatorname{cosec}} \quad (iii) \frac{1}{\operatorname{cosec}}$$

$$\sqrt{265^\circ - 1} \quad 65^\circ \quad 65^\circ$$

$$(iv) \frac{1}{\sqrt{\operatorname{cosec}^2 65^\circ - 1}} \quad (v) \sqrt{\operatorname{cosec}^2 65^\circ - 1}$$

41. Express $\tan 77^\circ$ in terms of $\sin 77^\circ$

$$(i) \frac{\sin 77^\circ}{\sqrt{1 - \sin^2 77^\circ}} \quad (ii) \frac{1}{\sqrt{1 - \sin^2 77^\circ}} \quad (iii) \sqrt{1 - \sin^2 77^\circ}$$

$$(iv) \frac{\sqrt{1 - \sin^2 77^\circ}}{\sin 77^\circ} \quad (v) \frac{1}{\sin 77^\circ}$$

42. Express $\tan 36^\circ$ in terms of $\cos 36^\circ$

$$(i) \frac{1}{\sqrt{1 - \cos^2 36^\circ}} \quad (ii) \frac{\sqrt{1 - \cos^2 36^\circ}}{\cos 36^\circ} \quad (iii) \sqrt{1 - \cos^2 36^\circ}$$

$$(iv) \frac{1}{\cos 36^\circ} \quad (v) \frac{\cos 36^\circ}{\sqrt{1 - \cos^2 36^\circ}}$$

43. Express $\tan 45^\circ$ in terms of $\cot 45^\circ$

$$(i) \frac{\sqrt{1 + \cot^2 45^\circ}}{\cot 45^\circ} \quad (ii) \frac{\cot 45^\circ}{\sqrt{1 + \cot^2 45^\circ}} \quad (iii) \frac{1}{\sqrt{1 + \cot^2 45^\circ}}$$

$$(iv) \frac{1}{\cot 45^\circ} \quad (v) \sqrt{1 + \cot^2 45^\circ}$$

44. Express $\tan 25^\circ$ in terms of $\sec 25^\circ$

$$(i) \frac{\sec 25^\circ}{\sqrt{\sec^2 25^\circ - 1}} \quad (ii) \sqrt{\sec^2 25^\circ - 1} \quad (iii) \frac{\sqrt{\sec^2 25^\circ - 1}}{\sec 25^\circ}$$

$$(iv) \frac{1}{\sec 25^\circ} \quad (v) \frac{1}{\sqrt{\sec^2 25^\circ - 1}}$$

45. Express $\tan 57^\circ$ in terms of $\operatorname{cosec} 57^\circ$

$$(i) \sqrt{\operatorname{cosec}^2 57^\circ - 1} \quad (ii) \frac{1}{\operatorname{cosec}} \quad (iii) \frac{\sqrt{\operatorname{cosec}^2 57^\circ - 1}}{\operatorname{cosec}}$$

$$\sqrt{\csc^2 57^\circ - 1} \quad 57^\circ$$

$$(iv) \frac{\csc 57^\circ}{\sqrt{\csc^2 57^\circ - 1}} \quad (v) \frac{1}{\csc 57^\circ}$$

46. Express $\cot 45^\circ$ in terms of $\sin 45^\circ$

$$(i) \frac{1}{\sqrt{1 - \sin^2 45^\circ}} \quad (ii) \frac{1}{\sin 45^\circ} \quad (iii) \frac{\sqrt{1 - \sin^2 45^\circ}}{\sin 45^\circ}$$

$$(iv) \sqrt{1 - \sin^2 45^\circ} \quad (v) \frac{\sin 45^\circ}{\sqrt{1 - \sin^2 45^\circ}}$$

47. Express $\cot 39^\circ$ in terms of $\cos 39^\circ$

$$(i) \frac{1}{\sqrt{1 - \cos^2 39^\circ}} \quad (ii) \frac{1}{\cos 39^\circ} \quad (iii) \sqrt{1 - \cos^2 39^\circ}$$

$$(iv) \frac{\cos 39^\circ}{\sqrt{1 - \cos^2 39^\circ}} \quad (v) \frac{\sqrt{1 - \cos^2 39^\circ}}{\cos 39^\circ}$$

48. Express $\cot 54^\circ$ in terms of $\tan 54^\circ$

$$(i) \frac{1}{\tan 54^\circ} \quad (ii) \frac{\tan 54^\circ}{\sqrt{1 + \tan^2 54^\circ}} \quad (iii) \frac{\sqrt{1 + \tan^2 54^\circ}}{\tan 54^\circ}$$

$$(iv) \sqrt{1 + \tan^2 54^\circ} \quad (v) \frac{1}{\sqrt{1 + \tan^2 54^\circ}}$$

49. Express $\cot 74^\circ$ in terms of $\sec 74^\circ$

$$(i) \frac{1}{\sec 74^\circ} \quad (ii) \frac{1}{\sqrt{\sec^2 74^\circ - 1}} \quad (iii) \frac{\sec 74^\circ}{\sqrt{\sec^2 74^\circ - 1}}$$

$$(iv) \frac{\sqrt{\sec^2 74^\circ - 1}}{\sec 74^\circ} \quad (v) \sqrt{\sec^2 74^\circ - 1}$$

50. Express $\cot 47^\circ$ in terms of $\csc 47^\circ$

$$(i) \frac{\sqrt{\csc^2 47^\circ - 1}}{\csc 47^\circ} \quad (ii) \frac{1}{\csc 47^\circ} \quad (iii) \frac{1}{\csc 47^\circ}$$

47°

47°

$\sqrt{\quad}$

$247^\circ - 1$

$$(iv) \frac{\operatorname{cosec} 47^\circ}{\sqrt{\operatorname{cosec}^2 47^\circ - 1}} \quad (v) \sqrt{\operatorname{cosec}^2 47^\circ - 1}$$

51. Express $\sec 79^\circ$ in terms of $\sin 79^\circ$

$$(i) \frac{1}{\sqrt{1 - \sin^2 79^\circ}} \quad (ii) \frac{\sin 79^\circ}{\sqrt{1 - \sin^2 79^\circ}} \quad (iii) \frac{\sqrt{1 - \sin^2 79^\circ}}{\sin 79^\circ}$$

$$(iv) \frac{1}{\sin 79^\circ} \quad (v) \sqrt{1 - \sin^2 79^\circ}$$

52. Express $\sec 32^\circ$ in terms of $\cos 32^\circ$

$$(i) \sqrt{1 - \cos^2 32^\circ} \quad (ii) \frac{1}{\cos 32^\circ} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 32^\circ}}$$

$$(iv) \frac{\sqrt{1 - \cos^2 32^\circ}}{\cos 32^\circ} \quad (v) \frac{\cos 32^\circ}{\sqrt{1 - \cos^2 32^\circ}}$$

53. Express $\sec 32^\circ$ in terms of $\tan 32^\circ$

$$(i) \frac{1}{\tan 32^\circ} \quad (ii) \frac{\tan 32^\circ}{\sqrt{1 + \tan^2 32^\circ}} \quad (iii) \frac{\sqrt{1 + \tan^2 32^\circ}}{\tan 32^\circ}$$

$$(iv) \frac{1}{\sqrt{1 + \tan^2 32^\circ}} \quad (v) \sqrt{1 + \tan^2 32^\circ}$$

54. Express $\sec 73^\circ$ in terms of $\cot 73^\circ$

$$(i) \frac{1}{\sqrt{1 + \cot^2 73^\circ}} \quad (ii) \frac{1}{\cot 73^\circ} \quad (iii) \sqrt{1 + \cot^2 73^\circ}$$

$$(iv) \frac{\cot 73^\circ}{\sqrt{1 + \cot^2 73^\circ}} \quad (v) \frac{\sqrt{1 + \cot^2 73^\circ}}{\cot 73^\circ}$$

55. Express $\sec 62^\circ$ in terms of $\operatorname{cosec} 62^\circ$

$$(i) \frac{\sqrt{\operatorname{cosec}^2 62^\circ - 1}}{\operatorname{cosec}} \quad (ii) \frac{1}{\operatorname{cosec}} \quad (iii) \sqrt{\operatorname{cosec}^2 62^\circ - 1}$$

62° 62°

$$(iv) \frac{\operatorname{cosec} 62^\circ}{\sqrt{\operatorname{cosec}^2 62^\circ - 1}} \quad (v) \frac{1}{\sqrt{\operatorname{cosec}^2 62^\circ - 1}}$$

56. Express $\operatorname{cosec} 35^\circ$ in terms of $\sin 35^\circ$

$$(i) \frac{\sqrt{1 - \sin^2 35^\circ}}{\sin 35^\circ} \quad (ii) \sqrt{1 - \sin^2 35^\circ} \quad (iii) \frac{\sin 35^\circ}{\sqrt{1 - \sin^2 35^\circ}}$$

$$(iv) \frac{1}{\sin 35^\circ} \quad (v) \frac{1}{\sqrt{1 - \sin^2 35^\circ}}$$

57. Express $\operatorname{cosec} 49^\circ$ in terms of $\cos 49^\circ$

$$(i) \frac{\cos 49^\circ}{\sqrt{1 - \cos^2 49^\circ}} \quad (ii) \frac{\sqrt{1 - \cos^2 49^\circ}}{\cos 49^\circ} \quad (iii) \frac{1}{\sqrt{1 - \cos^2 49^\circ}}$$

$$(iv) \frac{1}{\cos 49^\circ} \quad (v) \sqrt{1 - \cos^2 49^\circ}$$

58. Express $\operatorname{cosec} 47^\circ$ in terms of $\tan 47^\circ$

$$(i) \sqrt{1 + \tan^2 47^\circ} \quad (ii) \frac{\tan 47^\circ}{\sqrt{1 + \tan^2 47^\circ}} \quad (iii) \frac{1}{\tan 47^\circ}$$

$$(iv) \frac{\sqrt{1 + \tan^2 47^\circ}}{\tan 47^\circ} \quad (v) \frac{1}{\sqrt{1 + \tan^2 47^\circ}}$$

59. Express $\operatorname{cosec} 34^\circ$ in terms of $\cot 34^\circ$

$$(i) \sqrt{1 + \cot^2 34^\circ} \quad (ii) \frac{1}{\sqrt{1 + \cot^2 34^\circ}} \quad (iii) \frac{1}{\cot 34^\circ}$$

$$(iv) \frac{\sqrt{1 + \cot^2 34^\circ}}{\cot 34^\circ} \quad (v) \frac{\cot 34^\circ}{\sqrt{1 + \cot^2 34^\circ}}$$

60. Express $\operatorname{cosec} 23^\circ$ in terms of $\sec 23^\circ$

$$(i) \frac{\sqrt{\sec^2 23^\circ - 1}}{\sec} \quad (ii) \frac{\sec 23^\circ}{\sec} \quad (iii) \frac{1}{\sec}$$

$$\frac{\sin 23^\circ}{\sqrt{\sec^2 23^\circ - 1}}$$

$$(iv) \frac{1}{\sqrt{\sec^2 23^\circ - 1}} \quad (v) \sqrt{\sec^2 23^\circ - 1}$$

Assignment Key

- 1) (i)
- 2) (iv)
- 3) (v)
- 4) (i)
- 5) (iv)
- 6) (iii)
- 7) (i)
- 8) (i)
- 9) (ii)
- 10) (ii)
- 11) (iii)
- 12) (iv)
- 13) (iv)
- 14) (i)
- 15) (v)
- 16) (v)
- 17) (v)
- 18) (v)
- 19) (iv)
- 20) (v)
- 21) (ii)
- 22) (v)
- 23) (iii)
- 24) (ii)
- 25) (v)
- 26) (v)
- 27) (iii)
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- 46) (iii)
- 47) (iv)
- 48) (i)
- 49) (ii)
- 50) (v)
- 51) (i)
- 52) (ii)
- 53) (v)
- 54) (v)
- 55) (iv)

56) (iv)

57) (iii)

58) (iv)

59) (i)

60) (ii)