



1. $\sec 45^\circ \sin 45^\circ + \operatorname{cosec} 60^\circ \sin 90^\circ =$

- (i) $(1+2)$ (ii) $(1+\frac{2}{3}\sqrt{3})$ (iii) $(4+\frac{2}{3}\sqrt{3})$ (iv) $(-1+\frac{2}{3}\sqrt{3})$ (v) $(1+\frac{2}{3}\sqrt{3})$

2. $\frac{\operatorname{cosec} 30^\circ \cot 90^\circ - \tan 30^\circ \sin 90^\circ}{\sec 45^\circ \sin 30^\circ - \cos 90^\circ \cos 0^\circ} =$

- (i) $(-\frac{1}{3}\sqrt{6})$ (ii) $(-\frac{1}{3}\sqrt{3})$ (iii) $(-\frac{1}{3}\sqrt{8})$ (iv) (-2) (v) $(-\frac{1}{3}\sqrt{6})$

3. $\frac{\sin^2 5^\circ + \sin^2 85^\circ}{\cos^2 40^\circ + \cos^2 50^\circ} =$

- (i) 1 (ii) -1 (iii) undefined (iv) 2 (v) 0

4. $\frac{\sin 25^\circ \cos 65^\circ + \cos 25^\circ \sin 65^\circ}{\sin 30^\circ \cos 60^\circ + \cos 30^\circ \sin 60^\circ} =$

- (i) 0 (ii) 2 (iii) undefined (iv) -1 (v) 1

5. $\frac{1 + \tan^2 \theta}{1 + \cot^2 \theta} =$

- (i) $\operatorname{cosec}^2 \theta$ (ii) 1 (iii) $\sec^2 \theta$ (iv) $\cot^2 \theta$ (v) $\tan^2 \theta$

6. If $\cot \theta = \frac{2}{3}$, find $\frac{(1 + \sin \theta)(1 - \sin \theta)}{(1 - \cos \theta)(1 + \cos \theta)}$

- (i) $\frac{2}{9}$ (ii) $\frac{2}{3}$ (iii) $\frac{4}{11}$ (iv) $\frac{4}{7}$ (v) $\frac{4}{9}$

7. If $\tan \theta = \frac{1}{2}$, find $\frac{(1 + \cos \theta)(1 - \cos \theta)}{(1 + \sin \theta)(1 - \sin \theta)}$

- (i) $\frac{1}{2}$ (ii) $(\frac{-1}{4})$ (iii) $\frac{1}{6}$ (iv) $\frac{1}{4}$ (v) $\frac{3}{4}$

8. Find the value of $\frac{(1 + \sin \theta)}{(\cos \theta)} + \frac{(\cos \theta)}{(1 + \sin \theta)}$

- (i) $2\cos \theta$ (ii) $2\sec \theta$ (iii) $2\operatorname{cosec} \theta$ (iv) $2\sin \theta$

9. Find the value of $10\sec^2\theta - 10\tan^2\theta$

- (i) 1 (ii) 0 (iii) 13 (iv) 8 (v) 10

10. Find the value of $(1 + \tan\theta + \sec\theta)(1 + \cot\theta - \operatorname{cosec}\theta)$

- (i) 3 (ii) 4 (iii) (-1) (iv) 2 (v) 1

11. Find the value of $(\operatorname{cosec}\theta - \cot\theta)^2$

- (i) $\frac{1 - \cos\theta}{1 + \cos\theta}$ (ii) $\frac{1 + \cos\theta}{1 - \cos\theta}$ (iii) $\frac{1 + \sin\theta}{1 - \sin\theta}$ (iv) $\frac{1 - \sin\theta}{1 + \sin\theta}$

12. If $\tan\theta + \cot\theta = 8$, find $\tan^2\theta + \cot^2\theta$

- (i) 59 (ii) 63 (iii) 62 (iv) 64 (v) 61

13. If $\tan\theta - \cot\theta = 4$, find $\tan^2\theta + \cot^2\theta$

- (i) 19 (ii) 21 (iii) 17 (iv) 18 (v) 15

14. Which of the following are true?

a)

$$(\sec\theta - \tan\theta)^2 = \frac{1 - \sin\theta}{1 + \sin\theta}$$

b)

$$\frac{1 + \sin\theta}{\cos\theta} + \frac{\cos\theta}{1 + \sin\theta} = 2\sec\theta$$

c)

$$\frac{\cos\theta}{1 - \sin\theta} + \frac{\cos\theta}{1 + \sin\theta} = 2$$

d)

$$(\sec\theta - \tan\theta)^2 = \frac{1 + \sin\theta}{1 - \sin\theta}$$

e)

$$\frac{\cos\theta}{\operatorname{cosec}\theta + 1} + \frac{\cos\theta}{\operatorname{cosec}\theta - 1} = 2\tan\theta$$

- (i) {d,b} (ii) {c,a} (iii) {c,a,b} (iv) {a,b,e} (v) {c,d,e}

15. Which of the following are true?

a) $(\sin \theta + \cos \theta)^2 + (\sin \theta - \cos \theta)^2 = 2$

b)
$$\frac{\sec \theta}{1 + \operatorname{cosec} \theta} = \frac{1 - \operatorname{cosec} \theta}{\sec \theta}$$

c) $\cos^3 \theta - \sin^3 \theta = (\sin \theta + \cos \theta)(1 - \sin \theta \cos \theta)$

d) $(\sin \theta + \cos \theta)^2 = 1 + \sin 2\theta$

e)
$$\frac{\cos \theta}{1 + \sin \theta} = \frac{1 - \sin \theta}{\cos \theta}$$

f) $\cos^3 \theta + \sin^3 \theta = (\sin \theta + \cos \theta)(1 - \sin \theta \cos \theta)$

g) $(\sin \theta - \cos \theta)^2 = 1 + \sin 2\theta$

(i) {c,d} (ii) {c,f,a} (iii) {g,b,e} (iv) {b,a} (v) {a,d,e,f}

Assignment Key

1) (ii)	2) (v)	3) (i)	4) (v)	5) (v)	6) (v)
7) (iv)	8) (ii)	9) (v)	10) (iv)	11) (i)	12) (iii)
13) (iv)	14) (iv)	15) (v)			

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