

Trigonometric Functions - Class XI

Related Questions with Solutions

Questions

Question: 01

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

- A. 1
- B. -1
- C. 2
- D. -2

Solutions

Solution: 01

$$\begin{aligned} & \left(1 + \frac{\cos \theta}{\sin \theta} - \frac{1}{\sin \theta}\right) \left(1 + \frac{\sin \theta}{\cos \theta} + \frac{1}{\cos \theta}\right) \\ &= \left(\frac{\sin \theta + \cos \theta - 1}{\sin \theta}\right) \left(\frac{\cos \theta + \sin \theta + 1}{\cos \theta}\right) \\ &= \frac{(\sin \theta + \cos \theta)^2 - 1}{\sin \theta \cos \theta} \\ &= \frac{\sin^2 \theta + \cos^2 \theta + 2 \sin \theta \cos \theta - 1}{\sin \theta \cos \theta} \\ &= \frac{1 + 2 \sin \theta \cos \theta - 1}{\sin \theta \cos \theta} \\ &= 2 \end{aligned}$$

Correct Options

Answer:01

Correct Options: C