Trigonometry Questions Overview

Trigonometry Questions have a good weightage in the Banking Exam and the type of question asked in Banking exam is similar to the question mentioned below. It has been solved and explained by Gargi.ai Experts and they have tried to elaborate the concept used in Trigonometry Questions.

Question

What is the value of {[sin (x + y) – 2 sin x + sin (x – y)]/[cos (x – y) + cos (x + y) – 2 cos x]} × [(sin 10x – sin 8x)/(cos 10x + cos 8x)]?

Difficulty : Moderate   **Average Time : 33 Seconds**

Options :

1. 0

2. $\tan^2 x$

3. 1

4. 2 tan x

Solution

The correct answer is **option 2** i.e. $\tan^2 x$

$$\frac{\sin (x + y) - 2 \sin x + \sin (x + y)}{\cos (x - y) - \cos (x + y) - 2 \cos x} \times \frac{\sin 10x - \sin 8x}{\cos 10x - \cos 8x}$$

$$= \left[\frac{\sin x \cos y + \cos x \sin y - 2 \sin x + \sin x \cos y - \cos x \sin y}{\cos x \cos y + \sin x \sin y + \cos x \cos y - \sin x \sin y - 2 \cos x}\right] \times \frac{2 \cos 9x - \sin x}{2 \cos 9x - \cos x}$$

$$\Rightarrow \left[\frac{2 \sin x \cos y - 2 \sin x}{2 \cos x \cos y - 2 \cos x}\right] \times \tan x$$

$$\Rightarrow \left[\frac{2 \sin x (\cos y - 1)}{2 \cos x (\cos y - 1)}\right] \times \tan x$$

= tanx × tanx

= $\tan^2 x$

Page No: 1