



1.

Prove that

$$\sin^2 6x - \sin^2 4x = \sin 2x \sin 10x$$

[4 marks]

2.

Prove that

$$\sin 2x + 2 \sin 4x + \sin 6x = 4 \cos^2 x \sin 4x$$

[4 marks]

3.

Find the general solution of the equation  $\sec^2 2x = 1 - \tan 2x$

[4 marks]

4.

Prove that in any triangle  $(b-c) \cot \frac{A}{2} + (c-a) \cot \frac{B}{2} + (a-b) \cot \frac{C}{2} = 0$

[6 marks]

5.

In a  $\Delta ABC$  prove that  $a(\cos B + \cos C) = 2(b+c) \sin^2 \frac{A}{2}$

[4 marks]

6.

Find the general solutions of the equation  $\sin x + \sin 3x + \sin 5x = 0$ .

[4 marks]

7.

Find the value of  $\tan \frac{19\pi}{3}$ .

[1]



Class: CBSE XI  
Subject: Mathematics  
8.

Topic: Trigonometry  
Time: 60 Min

Prove  $\cos 4x = 1 - 3 \sin^2 x \cdot \cos^2 x$

[1]

9.

Prove  $\frac{\cos(\pi+x) \cdot \cos(-x)}{\sin(\pi-x) \cdot \cos\left(\frac{\pi}{2}+x\right)} = \cot^2 x$

[1 mark]

10.

Prove that  $\tan 56^\circ = \frac{\cos 11^\circ + \sin 11^\circ}{\cos 11^\circ - \sin 11^\circ}$

[1 mark]

Topperz@Work