Question asked by a learner

9 June 2020

DOUBLE ANGLE QUESTION

$\tan x = \frac{1-\cos 2x}{\sin 2x}$

RHS

$\frac{1-(cos^2x-sin^2x)}{\sin 2x}$

$\frac{1-(cos^2x-sin^2x)}{2sinx.cosx}$

$\frac{1-cos^2x+sin^2x}{2sinx.cosx}$

$\frac{sin^2x+sin^2x}{2sinx.cosx}$

$\frac{2sin^2x}{2sinx.cosx}$

$\frac{sinx}{cosx}$

=tan x

$\therefore LHS = RHS$

$$\cos 2x = cos^2x - sin^2x$$
$$\cos 2x = 2cos^2x - 1$$
$$\cos 2x = 1 - 2sin^2x$$

$$\sin 2x = 2sinx.cosx$$

$$1 = cos^2x + sin^2x$$
$$1 - cos^2x = sin^2x$$
$$1 + sin^2x = cos^2x$$