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Double Angle Tangent Formula

Name ______________________________

Date _________________ Period ______

Double Angle Tangent Formula

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

Sum Formula for Tangent

$$\tan(\alpha + \beta) = \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha\tan\beta}$$

$$\tan(2\theta)$$

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

Double Angle Tangent Formula

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

Given $\tan\theta = \frac{1}{2}$, determine the value of $\tan(2\theta)$

Double Angle Tangent Formula

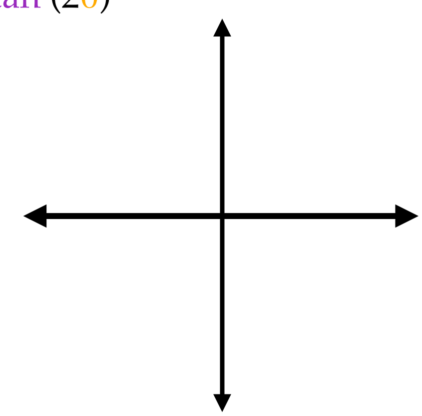
$$\tan(2\theta) = \frac{2\tan\theta}{1 - \tan^2\theta}$$

Given $\tan\theta = \frac{4}{3}$, determine the value of $\tan(2\theta)$

Double Angle Tangent Formula

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

Given $\cos\theta = -\frac{1}{2}$; θ lies in quadrant 2, determine the value of $\tan(2\theta)$



Prove the following identities

$$\tan 2\theta = \frac{\sin 2\theta}{(\cos\theta + \sin\theta)(\cos\theta - \sin\theta)}$$

Prove the following identities

$$\cot 2\theta = \frac{\cot^2\theta - 1}{2\cot\theta}$$

Double Angle Tangent Formula

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