

Verifying Identities Double and Half Angles Notes

Write each expression in terms of a single trigonometric function.

1. $\cos^2 5 - \sin^2 5$

2. $\frac{2 \tan\left(\frac{\pi}{6}\right)}{1 - \tan^2\left(\frac{\pi}{6}\right)}$

$$\cos 2\theta = \cos^2\theta - \sin^2\theta$$

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

$$\cos 2 \cdot 5$$

$$\boxed{\cos 10}$$

$$\tan 2 \cdot \frac{\pi}{6}$$

$$\boxed{\tan \frac{\pi}{3}}$$

3. Verify: $\cos^4 x - \sin^4 x = \cos 2x$

Start

End

DOTS $(a^4 - b^4)$

$(a^2 + b^2)(a^2 - b^2)$

$$(\cos^2 x + \sin^2 x)(\cos^2 x - \sin^2 x)$$

$$1 \cdot \cos 2x$$

$$\boxed{\cos 2x} \checkmark$$