

Addition and double-angle formulae



Gold

Given that:

$$\tan\left(\theta + \frac{\pi}{4}\right) \equiv E \tan \theta \left(\frac{1 + \tan \theta}{1 - \tan^2 \theta}\right) + F \left(\frac{1 + \tan \theta}{1 - \tan^2 \theta}\right)$$

find the values of E and F .

Silver

Given that:

$$\cos\left(2\theta + \frac{\pi}{3}\right) \equiv \cos \theta (\cos \theta + C \sin \theta) + D$$

find the values of C and D .

Bronze

Given that:

$$\sin\left(\theta + \frac{\pi}{6}\right) \equiv A \sin \theta + B \cos \theta$$

find the values of A and B .