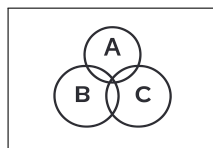
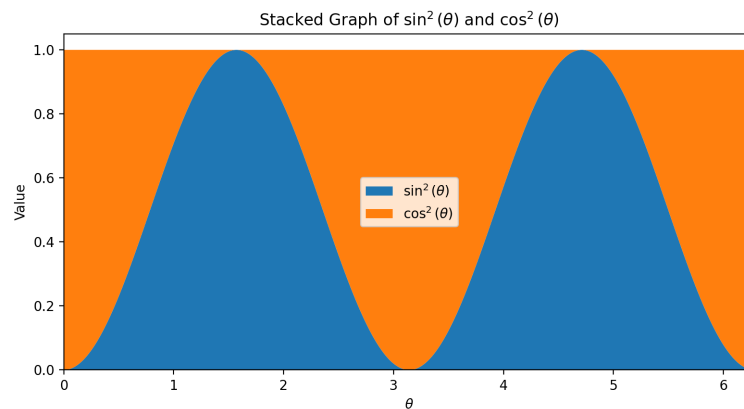
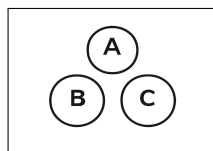


29 Formulas and Identities

Pythagorean Identities

A



$$\sin^2(\theta) + \cos^2(\theta) = 1$$

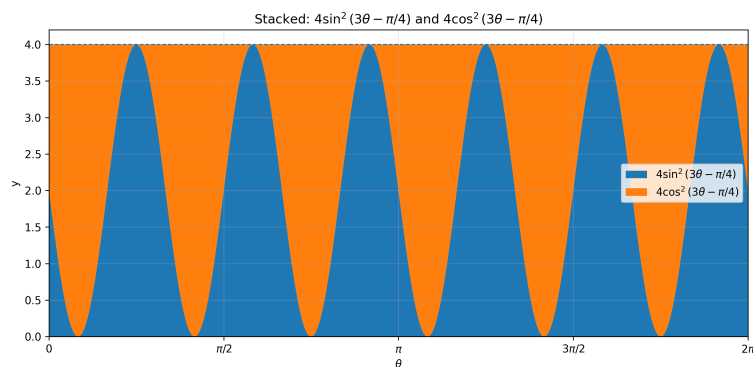
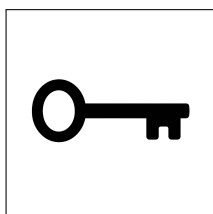
$$Y_1 = 4 \sin^2(3\theta - \pi/4)$$

$$Y_2 = 4 \cos^2(3\theta - \pi/4)$$

$$Y_1 + Y_2 = ?$$

29 Formulas and Identities Pythagorean Identities

A



$$Y_1 = 4\sin^2(3\theta - \pi/4)$$
$$Y_2 = 4\cos^2(3\theta - \pi/4)$$

$$u = 3\theta - \pi/4$$
$$\sin^2(u) + \cos^2(u) = 1$$

$$Y_1 + Y_2 = 4(\sin^2(u) + \cos^2(u)) = 4 \times 1 = 4$$