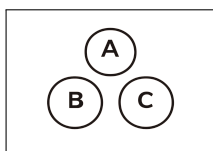


37 Formulas and Identities

Sum to Product

D



$$\alpha = 120^\circ$$

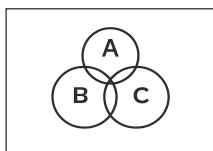
$$\beta = 60^\circ$$

$$\cos(\alpha) - \cos(\beta) = -2 \sin((\alpha + \beta)/2) \times \sin((\alpha - \beta)/2)$$

$$\cos(120^\circ) - \cos(60^\circ) = -2 \sin(90^\circ) \times \sin(30^\circ)$$

$$\cos(120^\circ) - \cos(60^\circ) = -2(1) \times (1/2)$$

$$\cos(120^\circ) - \cos(60^\circ) = -1$$

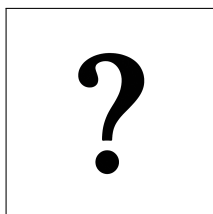


$$\cos(\alpha) - \cos(\beta) = 2 \sin((\alpha + \beta)/2) \times \sin((\alpha - \beta)/2)$$

$$\alpha = 195^\circ$$

$$\beta = 75^\circ$$

$$\cos(\alpha) - \cos(\beta) = ?$$



37 Formulas and Identities Sum to Product

D



$$\alpha = 195^\circ$$

$$\beta = 75^\circ$$

$$\cos(\alpha) - \cos(\beta) = -2 \sin((\alpha + \beta)/2) \times \sin((\alpha - \beta)/2)$$

$$\cos(195^\circ) - \cos(75^\circ) = -2 \sin(135^\circ) \times \sin(60^\circ)$$

$$\cos(195^\circ) - \cos(75^\circ) = -2(\sqrt{2}/2) \times (\sqrt{3}/2)$$

$$\cos(195^\circ) - \cos(75^\circ) = -2\sqrt{6}/4$$

$$\cos(195^\circ) - \cos(75^\circ) = -\sqrt{6}/2$$