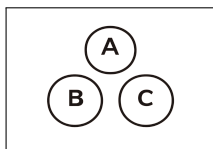


36 Formulas and Identities

Product to Sum

C



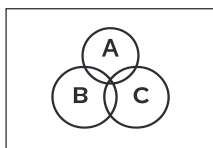
$$\alpha = 75^\circ$$

$$\beta = 15^\circ$$

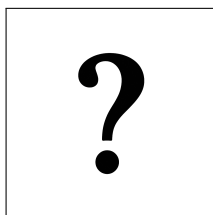
$$\sin(75^\circ) \cos(15^\circ) = 1/2[\sin(60^\circ) + \sin(90^\circ)]$$

$$\sin(75^\circ) \cos(15^\circ) = 1/2[(\sqrt{3} + 2)/2]$$

$$\sin(75^\circ) \cos(15^\circ) = (2 + \sqrt{3})/4$$



$$\sin(\alpha) \cos(\beta) = 1/2[\sin(\alpha - \beta) + \sin(\alpha + \beta)]$$



$$\alpha = 105^\circ$$

$$\beta = 15^\circ$$

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

36 Formulas and Identities

Product to Sum

C



$$\alpha = 105^\circ$$

$$\beta = 15^\circ$$

$$\sin(\alpha) \cos(\beta) = 1/2[\sin(\alpha - \beta) + \sin(\alpha + \beta)]$$

$$\sin(105^\circ) \cos(15^\circ) = 1/2[\sin(90^\circ) + \sin(120^\circ)]$$

$$\sin(105^\circ) \cos(15^\circ) = 1/2[1 + (\sqrt{3}/2)]$$

$$\sin(105^\circ) \cos(15^\circ) = 1/2 \times (2 + \sqrt{3})/2$$

$$\sin(105^\circ) \cos(15^\circ) = (2 + \sqrt{3})/4$$