Trigonometry Identities - Sum to Product to Identity (Greek Letter)

1

Complete the sum to product identity for this expression $\sin(\beta) + \sin(\gamma)$

A $= \sin(\dfrac{2}{(\beta + \gamma)})\sin(\dfrac{(\beta - \gamma)}{2})$

B $= 2\sin(\dfrac{(\beta + \gamma)}{2})\cos(\dfrac{(\beta - \gamma)}{2})$

2

Complete the sum to product identity for this expression $\cos(\alpha) + \cos(\gamma)$

A $= 2\cos(\dfrac{(\alpha + \gamma)}{2})\cos(\dfrac{(\alpha - \gamma)}{2})$

B $= 2\cos(\dfrac{2}{(\alpha + \gamma)})\cos(\dfrac{(\alpha - \gamma)}{2})$

3

Complete the sum to product identity for this expression $\cos(\gamma) + \cos(\beta)$

A $= \cos(\dfrac{(\gamma + \beta)}{2})\cos(\dfrac{(\gamma + \beta)}{2})$

B $= 2\cos(\dfrac{(\gamma + \beta)}{2})\cos(\dfrac{(\gamma - \beta)}{2})$

4

Complete the sum to product identity for this expression $\sin(\beta) + \sin(\alpha)$

A $= \sin(\dfrac{2}{(\beta + \alpha)})\sin(\dfrac{(\beta - \alpha)}{2})$

B $= 2\sin(\dfrac{(\beta + \alpha)}{2})\cos(\dfrac{(\beta - \alpha)}{2})$

5

Complete the sum to product identity for this expression $\sin(\alpha) - \sin(\beta)$

A $= 2\cos(\dfrac{(\alpha + \beta)}{2}) - \sin(\dfrac{(\alpha + \beta)}{2})$

B $= 2\sin(\dfrac{(\alpha - \beta)}{2})\cos(\dfrac{(\alpha + \beta)}{2})$

6

Complete the sum to product identity for this expression $\cos(\alpha) - \cos(\theta)$

A $= 2\sin(\dfrac{2}{(\alpha + \theta)})\cos(\dfrac{(\alpha - \theta)}{2})$

B $= -2\sin(\dfrac{(\alpha + \theta)}{2})\sin(\dfrac{(\alpha - \theta)}{2})$

7

Complete the sum to product identity for this expression $\cos(\beta) + \cos(\gamma)$

A $= 2\sin(\dfrac{(\beta + \gamma)}{2})\sin(\dfrac{(\beta - \gamma)}{2})$

B $= 2\cos(\dfrac{(\beta + \gamma)}{2})\cos(\dfrac{(\beta - \gamma)}{2})$

8

Complete the sum to product identity for this expression $\sin(\gamma) + \sin(\theta)$

A $= 2\cos(\dfrac{(\gamma - \theta)}{2}) - \sin(\dfrac{(\gamma + \theta)}{2})$

B $= 2\sin(\dfrac{(\gamma + \theta)}{2})\cos(\dfrac{(\gamma - \theta)}{2})$