



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

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

A $= \frac{1}{2} [\sin(\alpha + \theta) + \sin(\alpha - \theta)]$

B $= \frac{1}{2} [\sin(\alpha + \theta) + \sin(\alpha - \theta)]$

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

A $= \frac{1}{2} [\cos(\theta + \alpha) + \cos^2(\theta + \alpha)]$

B $= \frac{1}{2} [\sin(\theta + \alpha) - \sin(\theta - \alpha)]$

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

A $= \frac{1}{2} [\sin(\alpha + \theta) + \sin(\alpha - \theta)]$

B $= \frac{1}{2} [\sin(\alpha + \theta) - \sin(\alpha - \theta)]$

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

A $= \frac{1}{2} [\cos(\gamma - \theta) - \cos(\gamma + \theta)]$

B $= \frac{1}{2} [\cos(\gamma + \theta) + \sin(\gamma + \theta)]$

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

A $= \frac{1}{2} [\sin(\alpha + \gamma) + \sin(\alpha - \gamma)]$

B $= \frac{1}{2} [\sin(\alpha + \gamma) + \sin(\alpha - \gamma)]$

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

A $= \frac{1}{2} [\cos(\beta - \gamma) + \cos(\beta + \gamma)]$

B $= \frac{1}{2} [\cos(\beta + \gamma) + \cos^2(\beta + \gamma)]$

7 Complete the product to sum identity for this expression $\cos(\theta)\cos(\beta)$

A $= \frac{1}{2} [\cos(\theta + \beta) + \cos^2(\theta + \beta)]$

B $= \frac{1}{2} [\cos(\theta - \beta) + \cos(\theta + \beta)]$

8 Complete the product to sum identity for this expression $\cos(\theta)\cos(\gamma)$

A $= \frac{1}{2} [\cos(\theta - \gamma) + \cos(\theta + \gamma)]$

B $= \frac{1}{2} [\sin(\theta + \gamma) + \sin(\theta - \gamma)]$