

$$\begin{aligned} & 2 \sin \theta \times (2 \sin(60 - \theta) \sin(60 + \theta)) \\ &= 2 \sin \theta \times (\cos(-2\theta) - \cos 120) \\ &= 2 \sin \theta (\cos 2\theta + 0.5) = 2 \sin \theta \cos 2\theta + \sin \theta \\ &= \sin 3\theta + \sin -\theta + \sin \theta = \sin 3\theta \end{aligned}$$