Conditions

sin4A+sin2A/1+cos2A+cos4A=tan2A (prove this)
sin3A-sinA/cos3A+cosA=tanA (prove)

Solution

$$\frac{\sin 4a + \sin 2a}{1 + \cos 2a + \cos 4a} = \tan 2a$$

$$\frac{\sin 4a + \sin 2a}{1 + \cos 2a + \cos 4a} = \frac{2\sin 2a \cos 2a + sin2a}{cos^2 2a + \cancel{sin^2 2a} + \cos 2a + cos^2 2a - \cancel{sin^2 2a}}$$

$$= \frac{\sin 2a\,(2\cos 2a + 1)}{\cos 2a\,(2\cos 2a + 1)} = \tan 2a$$

$$\frac{\sin 3a - \sin a}{\cos 3a + \cos a} = \tan a$$

$$\frac{\sin 3a - \sin a}{\cos 3a + \cos a} = \frac{\cancel{2}\sin a \cancel{\cos 2a}}{\cancel{2\cos 2a}\cos a} = \frac{\sin a}{\cos a} = \tan a$$