3.49

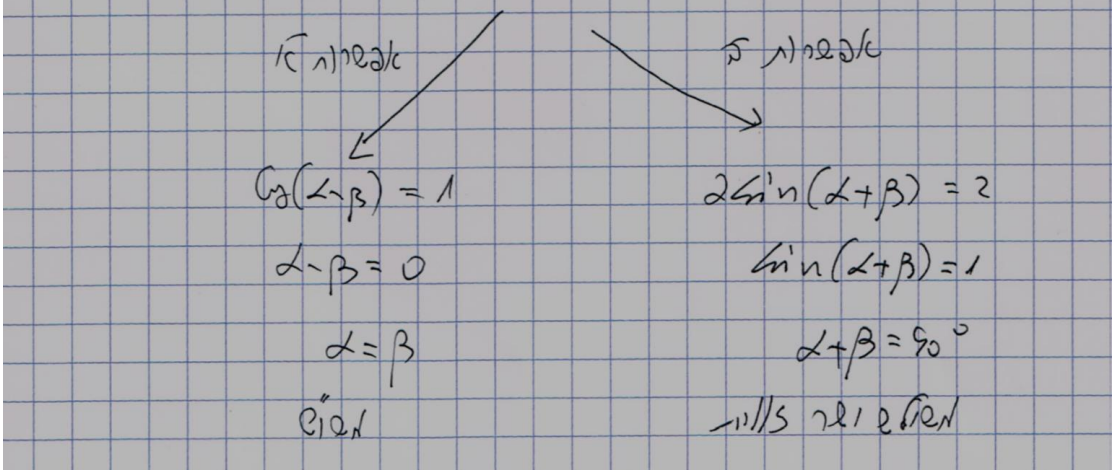
1.5

$$\sin 2\alpha + \sin 2\beta = 2\left[\sin\gamma + \cos(\alpha-\beta) - 1\right]$$

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

$$2\sin(\alpha+\beta)\cos(\alpha-\beta) - 2\sin(\alpha+\beta) = 2\cos(\alpha-\beta) - 2$$

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



$$\cos(\alpha-\beta) = 1$$

$$\alpha - \beta = 0$$

$$\alpha = \beta$$

$$2\sin(\alpha+\beta) = 2$$

$$\sin(\alpha+\beta) = 1$$

$$\alpha+\beta = 90^\circ$$