

2.89
→ 5

$$\sin^2 \alpha + \sin^2 \beta + \sin^2 \gamma$$

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

$$\sin^2 \alpha = \sin^2 (\alpha + \beta) + \sin^2 \beta = 0$$

$$[\sin \alpha - \sin (\alpha + \beta)] [\sin \alpha + \sin (\alpha + \beta)] + \sin^2 \beta = 0$$

$$-2 \sin \frac{\alpha}{2} \cos \frac{\alpha + \beta}{2} \cdot 2 \sin \frac{\alpha + \beta}{2} \cos \frac{\alpha + \beta}{2} + \sin^2 \beta = 0$$

$$-4 \sin \frac{\alpha}{2} \cos \frac{\alpha + \beta}{2} \sin \frac{\alpha + \beta}{2} \cos \frac{\alpha + \beta}{2} + \sin^2 \beta = 0$$

$$4 \sin \frac{\alpha}{2} \cos \frac{\alpha + \beta}{2} \sin \frac{\alpha + \beta}{2} \cos \frac{\alpha + \beta}{2} = \sin^2 \beta$$

↓

$$\beta = \pi k$$

π-кратный угол

↓

$$\beta = 2\alpha + \beta + 2\pi k \quad \left| \quad \beta = \pi - 2\alpha - \beta + 2\pi k \right.$$

$$2\beta + 2\alpha = \pi + 2\pi k$$

$$\beta + \alpha = \frac{\pi}{2} + \pi k$$

$$\beta + \alpha = 90^\circ \quad k=1 \text{ или } 2$$

→ или 2-й ответ ← γ = 90° α'β