

$\alpha)$

$$\begin{aligned}\cos \alpha + \cos \beta + \cos \gamma &= 2 \cos \frac{\alpha + \beta}{2} \cos \frac{\alpha - \beta}{2} + 1 - 2 \cos^2 \frac{\alpha + \beta}{2} = \\ &= 2 \cos \frac{\alpha + \beta}{2} \left( \cos \frac{\alpha - \beta}{2} - \cos \frac{\alpha + \beta}{2} \right) + 1 = \\ &= 4 \sin \frac{\alpha}{2} \sin \frac{\beta}{2} \sin \frac{\gamma}{2} + 1\end{aligned}$$

$\beta)$

$$\begin{aligned}\cos \alpha + \cos \beta - \cos \gamma &= 2 \cos \frac{\alpha + \beta}{2} \cos \frac{\alpha - \beta}{2} + 2 \cos^2 \frac{\alpha + \beta}{2} - 1 = \\ &= 2 \cos \frac{\alpha + \beta}{2} \left( \cos \frac{\alpha - \beta}{2} + \cos \frac{\alpha + \beta}{2} \right) - 1 = \\ &= 4 \cos \frac{\alpha}{2} \cos \frac{\beta}{2} \sin \frac{\gamma}{2} - 1.\end{aligned}$$

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*A feladatot még megoldották: Deutsch I., Haar A., Hirschfeld Gy., Kertész G., Kürti I., Petrik S., Veress G.*