

$$\begin{aligned} \sin 2v &= \sin(v) \\ \Leftrightarrow 2\sin(v)\cos(v) &= \sin(v) \\ \Leftrightarrow \sin(v) &= 0, \cos(v) = \frac{1}{2} \end{aligned}$$

a)

$$\begin{aligned} \sin(v) &= 0 \Leftrightarrow v = \pi n \\ \cos(v) &= \frac{1}{2} \Leftrightarrow \pm \frac{\pi}{3} + 2\pi n \\ n &\in \mathbb{Z} \end{aligned}$$