Problem 16: For what values of θ does $\operatorname{cis}\theta = \operatorname{cis} 2\theta$? (Source: AoPS Precalculus)

Suppose $\operatorname{cis}\theta = \operatorname{cis} 2\theta$. Then $e^{i\theta} = e^{2i\theta}$. Dividing both sides by $e^{i\theta}$ we get $1 = e^{i\theta}$.

Since $e^{i\theta} = 1$, we know that $\cos\theta = 1$ and $\sin\theta = 0$. It follows that $\boxed{\theta \text{ is an integer multiple of } 2\pi.}$