1371. Dokazati sledeći identitet: $\frac{\sin^4 x+\cos^4 x-1}{\sin^6 x+\cos^6 x-1}=\frac{2}{3}$.

$$\frac{\sin^4 x+\cos^4 x-1}{\sin^6 x+\cos^6 x-1}=\frac{2}{3}$$

$$\frac{\sin^4 x+2\sin^2 x\cos^2 x+\cos^4 x-2\sin^2 x\cos^2 x-1}{\left(\sin^2 x\right)^3+\left(\cos^2 x\right)^3-1}=\frac{2}{3}$$

$$\frac{\left(\sin^2 x+\cos^2 x\right)^2-2\sin^2 x\cos^2 x-1}{\left(\sin^2 x+\cos^2 x\right)\cdot\left(\sin^4 x-\sin^2 x\cos^2 x+\cos^4 x\right)-1}=\frac{2}{3}$$

$$\frac{1-2\sin^2 x\cos^2 x-1}{\left(\sin^4 x-\sin^2 x\cos^2 x+\cos^4 x\right)-1}=\frac{2}{3}$$

$$\frac{-2\sin^2 x\cos^2 x}{\sin^4 x-\sin^2 x\cos^2 x+3\sin^2 x\cos^2 x+\cos^4 x-3\sin^2 x\cos^2 x-1}=\frac{2}{3}$$

$$\frac{-2\sin^2 x\cos^2 x}{\sin^4 x+2\sin^2 x\cos^2 x+\cos^4 x-3\sin^2 x\cos^2 x-1}=\frac{2}{3}$$

$$\frac{-2\sin^2 x\cos^2 x}{\left(\sin^2 x+\cos^2 x\right)^2-3\sin^2 x\cos^2 x-1}=\frac{2}{3}$$

$$\frac{-2\sin^2 x\cos^2 x}{1-3\sin^2 x\cos^2 x-1}=\frac{2}{3}$$

$$\frac{-2\sin^2 x\cos^2 x}{-3\sin^2 x\cos^2 x}=\frac{2}{3}$$

$$\frac{2}{3}=\frac{2}{3}$$