$$
\begin{aligned}
&\frac{\cos(i)}{n\sqrt{1-\frac{\sin^2(i)}{n^2}}} = \frac{1}{2} \\
\iff &\cos^2(i) = \frac{n^2}{4} - \frac{sin^2(i)}{4} \\
\iff &\cos^2(i) + \sin^2(i) - \frac{3}{4}\sin^2(i) = \frac{n^2}{4} \qquad (1) \\
\iff &\sin^2(i) = -\frac{n^2}{3} + \frac{4}{3} \\
\iff &i = \arcsin\left(\sqrt{-\frac{n^2}{3} + \frac{4}{3}}\right) \\
\iff &i \approx 1\text{rad} \approx 60^\circ
\end{aligned}
$$