View Factor 24

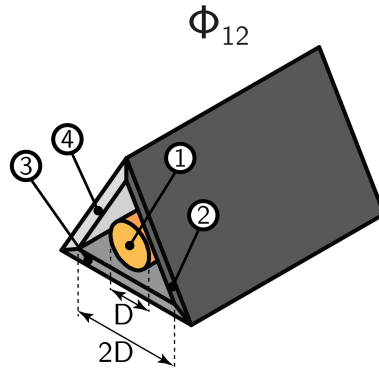**A long equilateral triangular body has a long cylinder inside. Determine the view factor Φ_{12}:**

$$\Phi_{12}$$

A solid cylinder can never see itself and therefore:

$$\Phi_{11} = 0$$

From symmetry it can be seen that $\Phi_{12} = \Phi_{13} = \Phi_{14}$, combining this with the summation rule $(\Phi_{11} + \Phi_{12} + \Phi_{13} + \Phi_{14} = 1)$ it yields:

$$\Phi_{12} = \frac{1}{3}$$