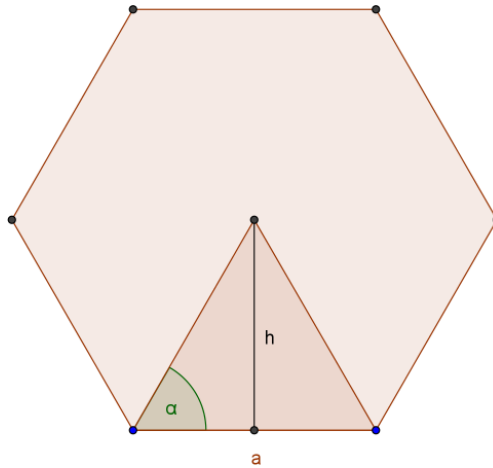
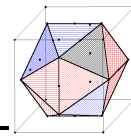


Vieleck - Flächeninhalt



$$\tan(\alpha) = \frac{h}{\frac{a}{2}}, \text{ mithin } h = \tan(\alpha) \cdot \frac{a}{2}$$

$$\alpha = \frac{1}{2} \cdot \left(180^\circ - \frac{360^\circ}{n}\right) = \frac{180^\circ}{2} \cdot \left(1 - \frac{2}{n}\right) = 90^\circ \cdot \frac{n-2}{n}$$

$$F_{\text{Dreieck}} = \frac{1}{2} \cdot a \cdot h = \frac{1}{2} \cdot a \cdot \tan(\alpha) \cdot \frac{a}{2} = \frac{1}{4} \cdot a^2 \cdot \tan(\alpha) = \frac{1}{4} \cdot a^2 \cdot \tan\left(90^\circ \cdot \frac{n-2}{n}\right)$$

$$F_{n\text{-Eck}} = \frac{n}{4} \cdot a^2 \cdot \tan\left(90^\circ \cdot \frac{n-2}{n}\right)$$

Für $n = 2012$ und $a = 4 \text{ mm}$ ergibt sich

$$F = \frac{2012}{4} \cdot 16 \cdot \tan\left(90^\circ \cdot \frac{2010}{2012}\right) \text{ mm}^2 \approx 5.154.252,833 \text{ mm}^2 \approx 5,15 \text{ m}^2 .$$