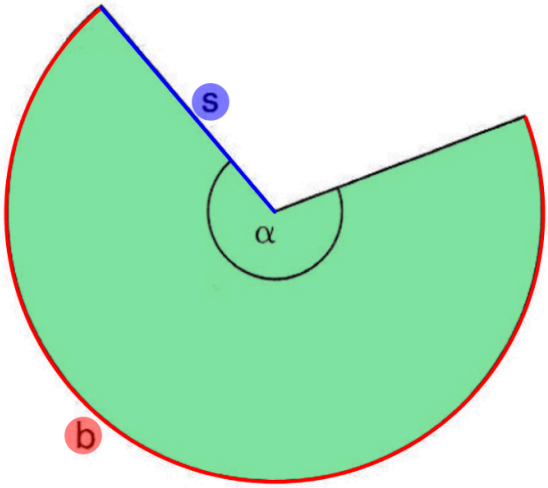
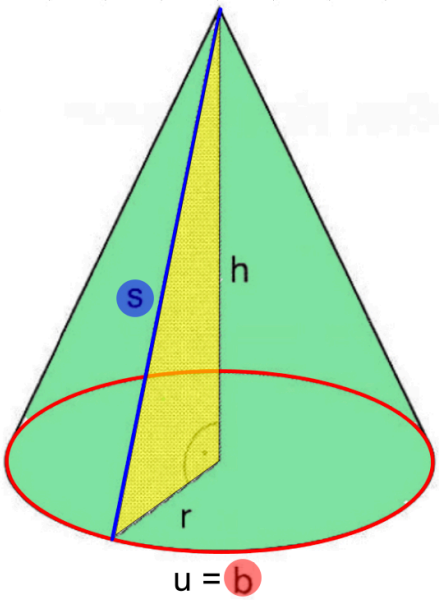
Maximales Kegelvolumen

Für welchen **Winkel α** wird das **Kegelvolumen maximal** sein?





$$b = 2 \cdot s \cdot \pi \cdot \frac{\alpha}{360}$$

$$u = b = 2 \cdot s \cdot \pi \cdot \frac{\alpha}{360}$$

$$r = \frac{u}{2 \cdot \pi} = \frac{2 \cdot s \cdot \pi \cdot \frac{\alpha}{360}}{2 \cdot \pi} = \frac{s \cdot \alpha}{360}$$

$$h = \sqrt{s^2 - r^2} = \sqrt{s^2 - \left(\frac{s \cdot \alpha}{360}\right)^2}$$

$$V = \frac{1}{3} \cdot G \cdot h = \frac{1}{3} \cdot r^2 \cdot \pi \cdot h = \frac{1}{3} \cdot \left(\frac{s \cdot \alpha}{360}\right)^2 \cdot \pi \cdot \sqrt{s^2 - \left(\frac{s \cdot \alpha}{360}\right)^2}$$