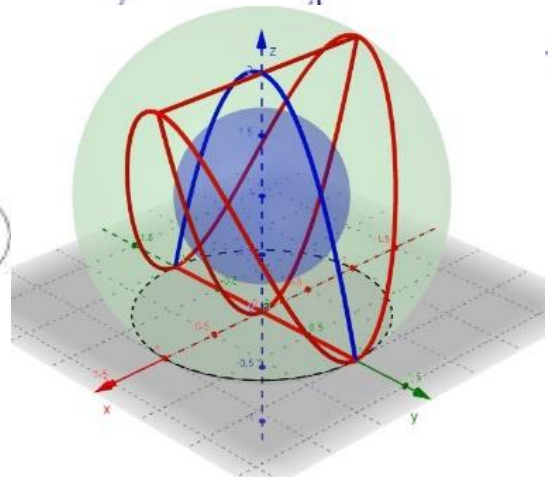
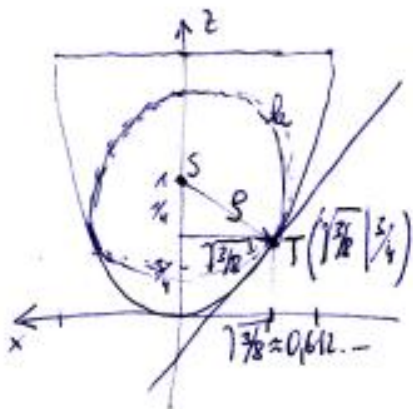


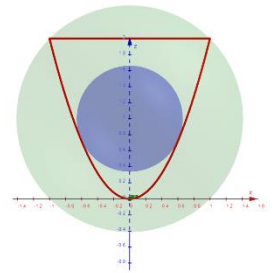
Umkugel



$$\| r_{Umkugel} = \sqrt{1^2 + 1^2} = \underline{\underline{\sqrt{2}}} \|$$



Inkugel



$$z = 2x^2$$

$$z' = 4x$$

$$k: x^2 + (z-1)^2 = \frac{1}{4}$$

$$k': 2x + 2(z-1) \cdot z' = 0$$

$$z' = -\frac{x}{z-1} \quad z' = 4x$$

$$-\frac{x}{z-1} = 4x$$

$$-\frac{1}{4} = z-1$$

$$z = 1 - \frac{1}{4} = \frac{3}{4}$$

$$\rho = \sqrt{\left(\frac{1}{4}\right)^2 + \left(\frac{1}{\sqrt{2}}\right)^2} = \sqrt{\frac{1}{16} + \frac{2}{8}} = \sqrt{\frac{7}{16}} = \frac{\sqrt{7}}{4}$$

$$\| \rho_{Inkugel} = \frac{\sqrt{7}}{4} \|$$

$$V_k = \frac{4\sqrt{3}}{3}$$

$$V_{Inkugel} = \frac{4\sqrt{3}}{3} \left(\frac{\sqrt{7}}{4}\right)^3 = \frac{7\sqrt{7} \cdot \pi}{48} = 0,585 \cdot \pi = 1,212 \dots$$

$$V_{Umkugel} = \frac{4\sqrt{3}}{3} (\sqrt{2})^3 = \frac{8\sqrt{2} \cdot \pi}{3} = 3,771 \cdot \pi = 11,84 \dots$$

$\left. \begin{array}{l} \times 5,771 \dots \\ \approx \times 10 \end{array} \right\}$