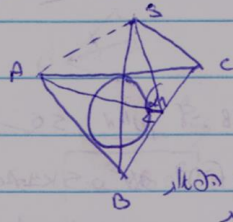


3.85
6

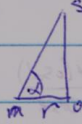


$$\pi r^2 = r \rightarrow \pi r = 1$$

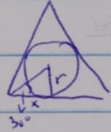
$$r = \frac{1}{\pi}$$

החיסוק של כדור המגע עם הפנים של התורה הוא כדור המגע עם כל אחת מהפנים של התורה (התורה היא כדור המגע עם כל אחת מהפנים)

$$\tan \alpha = \sqrt{3} \leftarrow 1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} = 4 \leftarrow \cos \alpha = \frac{1}{2}$$



$$SO = r \tan \alpha = \frac{\tan \alpha}{\pi} = \frac{\sqrt{3}}{\pi}$$



סימון x

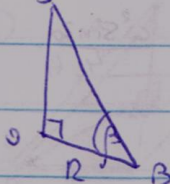
$$\frac{r}{x} = \tan 30^\circ \rightarrow x = \frac{r}{\tan 30^\circ}$$

$$AB = 2x = \frac{2r}{\tan 30^\circ} = 2\sqrt{3}r$$

$$S_{ABC} = \frac{\sqrt{3}}{4} \cdot AB^2 = \frac{\sqrt{3}}{4} \cdot 4 \cdot 3r^2 = 3\sqrt{3}r^2 = \frac{3\sqrt{3}}{\pi^2}$$

$$V = \frac{1}{3} S_{ABC} \cdot SO = \frac{1}{3} \cdot \frac{3\sqrt{3}}{\pi^2} \cdot \frac{\sqrt{3}}{\pi} = \frac{\sqrt{24}}{\pi^3} = \frac{2\sqrt{6}}{\pi^3}$$

$$\textcircled{7} \quad R_{\text{circ}} = \frac{\sqrt{3}}{3} AB = \frac{\sqrt{3}}{3} \cdot 2\sqrt{3}r = 2r = \frac{2}{\pi}$$



$$\tan \beta = \frac{SO}{R} = \frac{\frac{\sqrt{3}}{\pi}}{\frac{2}{\pi}} = \frac{\sqrt{3}}{2} = \sqrt{2}$$