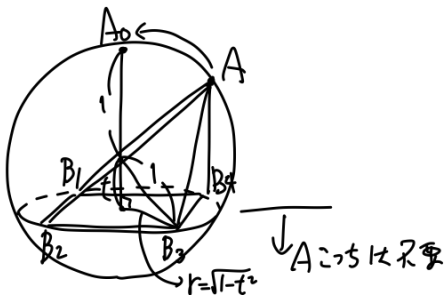


Lv 3.5



$B_1 \sim B_4$ 固定するに依り A_0 の max.
(t 固定)

$$\therefore \text{面積} \begin{matrix} B_1 & B_4 \\ \hline \text{B}_2 & \text{B}_3 \end{matrix} = \frac{1}{2} (\sqrt{2} \sqrt{1-t^2})^2 = 1-t^2$$

$$\begin{aligned} \text{したがって, } V &= \frac{1}{3} \times 2(1-t^2) \times (1+t) \\ &= \frac{2}{3} (-t^3 - t^2 + t + 1) \end{aligned}$$

($0 \leq t < 1$)

$$\begin{aligned} \frac{dV}{dt} &= \frac{2}{3} (-3t^2 - 2t + 1) \\ &= \frac{2}{3} (t+1) \underbrace{(1-3t)}_{-3 \times 1} \end{aligned}$$

t	$(0) \dots \frac{1}{3} \dots (1)$
V'	$+ \quad -$
V	$\nearrow \text{max} \searrow$

$$\begin{aligned} \max V &= \frac{2}{3} \left(1 - \frac{1}{9}\right) \left(1 + \frac{1}{3}\right) \\ &= \frac{2}{3} \cdot \frac{8}{9} \cdot \frac{4}{3} \\ &= \frac{64}{81} \end{aligned}$$