là ZBE +



 α を実数とし, $\sin \alpha + \cos \alpha = \frac{1}{3}$ をみたすものとする。以下の問いに答えよ。

- (1) $\sin \alpha \cos \alpha$ の値を求めよ。
- (2) $\sin^3 \alpha + \cos^3 \alpha$, および $\sin^4 \alpha + \cos^4 \alpha$ の値を求めよ。
- (3) $\sin^4 \alpha \cos^4 \alpha$ のとりうる値を全て求めよ。

$$\frac{1}{2 \text{ mid coold} + 1= \frac{1}{9}}$$

$$2 \text{ mid coold} + 1= \frac{1}{9}$$

$$2 \text{ mid coold} + 1= \frac{4}{9}$$

$$\frac{1}{9}$$

$$\frac{1}{9}$$

$$\frac{1}{9}$$

$$\frac{1}{9}$$

$$\frac{1}{9}$$

$$\frac{1}{9}$$

$$\frac{1}{9}$$

(2)
$$\text{Ri}^3d + \text{cos}^3d = (\text{Ri}^2d + \text{cos}^2d)^3 - 3 \text{Ri}^2d \text{cos}^2d (\text{Ri}^2d + \text{cos}^2d)$$

$$= \left(\frac{1}{3}\right)^3 - 3 \cdot \left(-\frac{\varphi}{9}\right) \cdot \frac{1}{3} = \frac{1}{27} + \frac{4}{9} = \frac{13}{27}$$

$$\text{Ri}^4d + \text{cos}^4d = \left(\text{Ri}^2d + \text{cos}^2d\right)^2 - 2 \text{Ri}^2d \text{cos}^2d$$

$$= 1^2 - 2 \cdot \left(-\frac{4}{9}\right)^2 = 1 + \frac{32}{81} = \frac{49}{81}$$

$$= \text{Ri}^3d + \text{cos}^2d = \frac{13}{27} \quad \text{Ri}^4d + \text{cos}^4d = \frac{49}{81}$$

 $= (\sin^2 t + \cos^2 t) (\sin^2 t - \cos^2 t) = (\sin^2 t + \cos^2 t) (\sin^2 t + \cos^2 t)$

$$(\text{mid} - \cos d)^2 = (\text{mid} + \cos d)^2 - 4 \text{ mid} \cos d$$

$$= (\frac{1}{3})^2 - 4 \cdot (-\frac{4}{9})$$

$$= \frac{17}{9}$$

$$= \text{mid} - \cot d = \pm \frac{17}{3}$$

とりの から

$$(xi^2 + cox d)(xi d + cox d)(xi d - cox d)$$

$$= 1 \cdot \frac{1}{3} \cdot \pm \frac{\sqrt{17}}{3}$$

$$\therefore \pm \frac{\sqrt{17}}{9}$$

数樂 http://www.mathtext.info/

