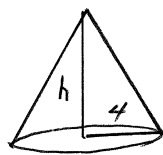


3

(1) ア、円すい



イ 球 半径 3cm. より

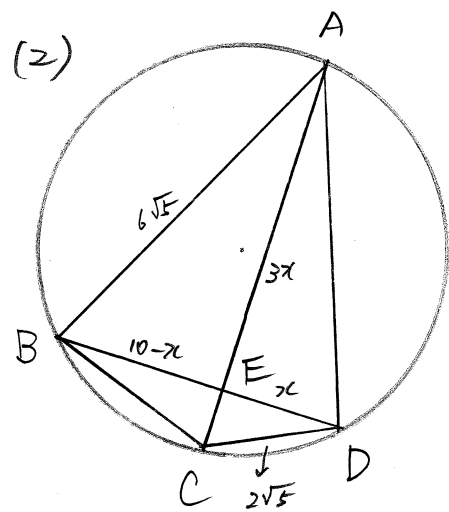
球の体積 = 円すいの体積

$$\frac{4\pi \times 3 \times 3 \times 3}{3} = 4 \times 4 \times \pi \times h \times \frac{1}{3} \quad \left(\times \frac{3}{4}\right)$$

$$27\pi = 4\pi h$$

$$\frac{4\pi h}{4\pi} = \frac{27\pi}{4\pi}$$

$$h = \frac{27}{4} \text{ (cm)}$$



ア.  $\triangle ABE$  と  $\triangle DCE$  において

$\widehat{BC}$  の円周角より

$$\angle BAE = \angle CDE \dots \textcircled{1}$$

対頂角より

$$\angle AEB = \angle DEC \dots \textcircled{2}$$

$\textcircled{1}$   $\textcircled{2}$  より 2組の角がそれぞれ  
等しいので

$$\triangle ABE \sim \triangle DCE.$$

$$\triangle ABE : \triangle DCE = 6\sqrt{5} : 2\sqrt{5} = 3 : 1.$$

$$\therefore (10-x)^2 + (3x)^2 = (6\sqrt{5})^2$$

$$100 - 20x + 10x^2 = 180$$

$$x^2 - 2x - 8 = 0$$

$$(x-4)(x+2) = 0$$

$$x = 4, -2$$

$$\therefore CD = 4$$

4

$$(1) y = -\frac{1}{4}x^2 \quad x = -8 \text{ 代入}$$

$$y = -\frac{1}{4} \times 64 = -16$$

$$A(-8, -16)$$

$$(2) \begin{matrix} A(-8, -16) \\ B(4, -4) \end{matrix} \text{ を } y = ax + b \text{ 代入}$$

$$-16 = -8a + b$$

$$-4 = 4a + b$$

$$-12 = -12a$$

$$a = 1$$

$$-4 = 4 + b$$

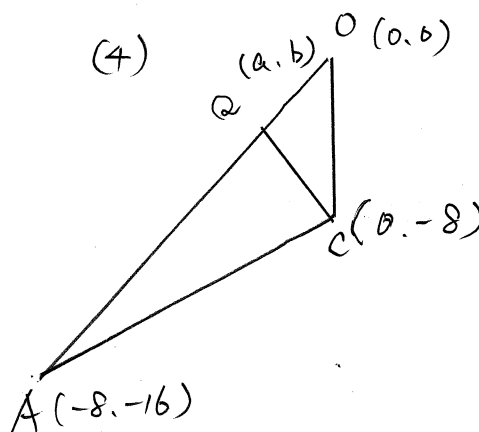
$$-8 = b$$

$$y = x - 8$$

(3)  $\triangle OAC + \triangle OCB$  より

$$8 \times 8 \times \frac{1}{2} + 8 \times 4 \times \frac{1}{2} = 32 + 16 = 48$$

(4)



$$\triangle OAC - \triangle OQC = 24$$

$$8 \times 8 \times \frac{1}{2} - 8 \times a \times \frac{1}{2} = 24$$

$$4a = 8$$

$$a = 2.$$

a は負の値なので

$$a = -2.$$

$$y = 2x \text{ 1. } x = -2 \text{ 代入}$$

$$y = 2 \times (-2) = -4$$

$$\therefore Q(-2, -4)$$