

## H 2 9 産 技 ①

$$\begin{aligned} \square(1) & \left(2 - \frac{2}{3}\right) \times \left(-\frac{3}{2}\right)^2 \\ & = \frac{4}{3} \times \frac{9}{4} \\ & = \underline{\underline{3}} \end{aligned}$$

$$\begin{aligned} (2) & (1 + \sqrt{5})(1 - \sqrt{5}) + (\sqrt{2} + \sqrt{6})^2 \\ & = (1 - 5) + (2 + 4\sqrt{3} + 6) \\ & = \underline{\underline{4 + 4\sqrt{3}}} \end{aligned}$$

$$\begin{aligned} (3) & 3 a b^2 \times (-2 a^2)^3 \div (-12 a^2 b) \\ & = 3 a b^2 \times (-8 a^6) \div (-12 a^2 b) \\ & = -24 a^7 b^2 \div (-12 a^2 b) \\ & = \underline{\underline{2 a^5 b}} \end{aligned}$$

$$\begin{aligned} (4) & \frac{5a + 4b}{3} + a - 2b \\ & = \frac{5a + 4b + 3(a - 2b)}{3} \\ & = \frac{5a + 4b + 3a - 6b}{3} \\ & = \underline{\underline{\frac{8a - 2b}{3}}} \end{aligned}$$

## H 2 9 產 技 ②

$$\begin{aligned} \text{① (5)} \quad & \begin{cases} -3x + 2y = 12 \\ 5x - 4y = -26 \end{cases} \\ & \begin{cases} -6x + 4y = 24 \\ 5x - 4y = -26 \end{cases} \\ & \begin{aligned} & -x & & = -2 \end{aligned} \end{aligned}$$

$$\therefore x = 2$$

$$-3 \times 2 + 2y = 12$$

$$-6 + 2y = 12$$

$$2y = 18$$

$$\therefore y = 9$$

$$\therefore \underline{x = 2, y = 9}$$

$$(6) \quad (x + 3)^2 - 10(x + 3) + 9 = 0$$

$$\{(x + 3) - 9\}\{(x + 3) - 1\} = 0$$

$$(x - 6)(x + 2) = 0$$

$$\therefore \underline{x = -2, 6}$$

$$(7) \quad y = 4x^2$$

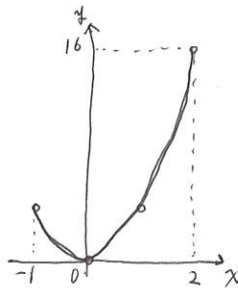
$$y = 4 \times 0^2$$

$$= 0$$

$$y = 4 \times 2^2$$

$$= 16$$

$$\therefore \underline{0 \leq y \leq 16}$$



## H 2 9 摩技③

$$\begin{aligned}
 (1) \quad & 5 < \sqrt{6n} < 10 \\
 & 25 < 6n < 100 \\
 & 6 \times 4 = 24 \\
 & 6 \times 5 = 30 \\
 & 6 \times 16 = 96 \\
 & 6 \times 17 = 102 \\
 & n = 5, 6, \dots, 16 \\
 & 16 - 5 + 1 = \underline{12 \text{ 個}} \quad \#
 \end{aligned}$$

$$(2) \quad \begin{cases} x + 5 = y \\ \frac{10}{100}x + 5 = \frac{20}{100}y \\ \begin{cases} x + 5 = y \\ x + 50 = 2y \end{cases} \end{cases}$$

$$\therefore 45 = y$$

$$x + 5 = 45$$

$$\therefore x = 40$$

$$\therefore \underline{x = 40, y = 45} \quad \#$$

$$(3) \quad \frac{x}{5} + 2 = \frac{x}{3} \\
 3x + 30 = 5x$$

$$\therefore \underline{x = 15 \text{ m}} \quad \#$$

$$\begin{aligned}
 (4) \quad & \frac{\frac{4}{4} - \frac{4}{2}}{4 - 2} \\
 & = \frac{1 - 2}{4 - 2} \\
 & = \underline{-\frac{1}{2}} \quad \#
 \end{aligned}$$

## H 2 9 產 技 ④

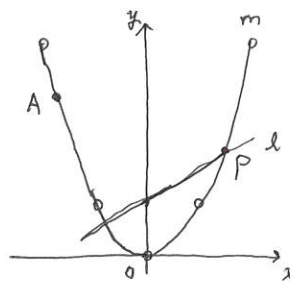
$$\begin{aligned} \textcircled{3} (1) \quad y &= x^2 \\ &= 2^2 \\ &= 4 \end{aligned}$$

$$\therefore P(2, 4)$$

$$y = x + k$$

$$4 = 2 + k$$

$$\therefore \underline{k = 2}$$



$$\begin{aligned} (2) \quad y &= (-2)^2 \\ &= 4 \end{aligned}$$

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

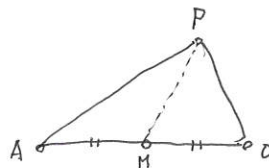
$$O(0, 0)$$

$$M(-1, 2)$$

$$y = x + k$$

$$2 = -1 + k$$

$$\therefore \underline{k = 3}$$



$$(3) \quad O(0, 0)$$

$$y = x + k$$

$$0 = 0 + k$$

$$\therefore k = 0$$

$$A(-2, 4)$$

$$y = x + k$$

$$4 = -2 + k$$

$$\therefore k = 6$$

$$\therefore \underline{0 \leq k \leq 6}$$

## H 2 9 産 技 ⑤

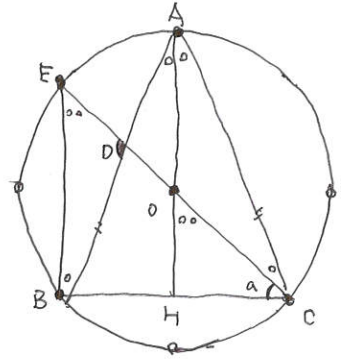
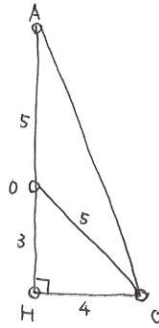
④ (1)  $CO^2 = OH^2 + HC^2$   
 $5^2 = 3^2 + HC^2$

$\therefore HC = 4$

$AC^2 = CH^2 + HA^2$

$AC^2 = 4^2 + (5+3)^2$

$\therefore AC = \underline{4\sqrt{5} \text{ cm}}$



(2)  $EB:BC = OH:HC$

$EB:8 = 3:4$

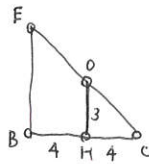
$\therefore EB = 6$

$\triangle AOD \sim \triangle BED$  におい

相似比 =  $5:6$

面積比 =  $5^2:6^2$

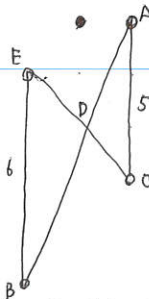
$\therefore 25:36$



$r = 5$

$AB = AC$

$OH = 3$



(3)  $\angle OCA = x^\circ$  とする

$\angle OAC = x^\circ$  ( $\because OA = OC$ )

$\angle HAC + \angle ACH + \angle CHA = 180^\circ$

$x^\circ + (a+x)^\circ + 90^\circ = 180^\circ$

$\therefore x = 45 - \frac{1}{2}a$

$\angle EDB = \angle DCB + \angle CBD$

$= a^\circ + (a+x)^\circ$

$= 2a^\circ + 45^\circ - \frac{1}{2}a^\circ$

$= \underline{\underline{\frac{3}{2}a^\circ + 45^\circ}}$

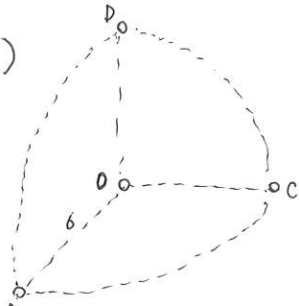
## H 2 9 産 技 ⑥

5 (1) ①

$$V = \frac{4}{3} \pi r^3 \text{ より}$$

(身の上に心配があるから参考)

$$\begin{aligned} V &= \frac{4}{3} \pi \times 6^3 \div 8 \\ &= \underline{36\pi \text{ cm}^3} \end{aligned}$$



②

$$S = 4\pi r^2 \text{ より}$$

$$\begin{aligned} S &= 4\pi \times 6^2 \div 8 + 6^2 \pi \div 4 \times 3 \\ &\text{(}\frac{1}{8}\text{球の表面積) (}\frac{1}{4}\text{円の側面積3つ)} \\ &= 18\pi + 27\pi \\ &= \underline{45\pi \text{ cm}^2} \end{aligned}$$

$$\begin{aligned} (2) \quad OF &= \sqrt{6^2 + 6^2 + 6^2} \\ &= 6\sqrt{3} \end{aligned}$$

$$\begin{aligned} PF &= OF - OP \\ &= \underline{(6\sqrt{3} - 6) \text{ cm}} \end{aligned}$$

