

### H30 産技 ①

$$\begin{aligned}
 \boxed{1} (1) \quad \left(-2 + \frac{5}{3}\right) - \frac{1}{7} &= \left(-\frac{6}{3} + \frac{5}{3}\right) - \frac{1}{7} \\
 &= \left(-\frac{1}{3}\right) - \frac{1}{7} \\
 &= \frac{1}{9} - \frac{1}{7} \\
 &= \frac{7}{63} - \frac{9}{63} \\
 &= \underline{\underline{-\frac{2}{63}}}
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad 6\sqrt{3}(\sqrt{2} + 1) + (3 - \sqrt{6})^2 \\
 &= 6\sqrt{6} + 6\sqrt{3} + 9 - 6\sqrt{6} + 6 \\
 &= \underline{\underline{6\sqrt{3} + 15}}
 \end{aligned}$$

$$\begin{aligned}
 (3) \quad 6a^2b \div (-4ab^2)^2 \times (-2a)^3 \\
 &= \frac{6a^2b \times (-8a^3)}{16a^2b^4} \\
 &= \underline{\underline{-\frac{3a^3}{b^3}}}
 \end{aligned}$$

## H. 3 の 摩 技 ②

$$\begin{aligned}
 \text{I} (4) \quad & \frac{3a + b}{2} + \frac{2a - 4b}{3} \\
 & = \frac{3(3a + b) + 2(2a - 4b)}{6} \\
 & = \frac{9a + 3b + 4a - 8b}{6} \\
 & = \frac{13a - 5b}{6} \quad \#
 \end{aligned}$$

$$\begin{aligned}
 (5) \quad & (x + 3)(x - 2) + 2 - x \\
 & = x^2 + x - 6 + 2 - x \\
 & = x^2 - 4 \\
 & = (x + 2)(x - 2) \quad \#
 \end{aligned}$$

$$(6) \quad (2\sqrt{5})^2 = 20 = \frac{180}{9}$$

$$(3\sqrt{2})^2 = 18 = \frac{162}{9}$$

$$\left(\frac{14}{3}\right)^2 = \frac{196}{9}$$

$$\therefore 3\sqrt{2}, 2\sqrt{5}, \frac{14}{3} \quad \#$$

$$\begin{aligned}
 (7) \quad & \frac{8 \cdot 1^2 - 3 \cdot (-2)^2}{1 - (-2)} = 3\{1 + (-2)\} \\
 & = -3 \quad \#
 \end{aligned}$$

### H 3 0 産 技 ③

② (1)  $\sqrt{(-5)^2} = \sqrt{25} = 5$

$$\sqrt{\frac{1}{9}} = \frac{1}{3}$$

$$\sqrt{16} = 4$$

$$(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3}) = 2 - 3 = -1$$

$$\sqrt{7} - \sqrt{5}$$

36の平方根は±6

~~XXXXXXXXXX~~

$$x^2 = 1 \quad (x+1)(x-1) = 0 \quad \therefore x = \pm 1$$

$$\sqrt{0.01} = \sqrt{(0.1)^2} = 0.1$$

$$\therefore \underline{1, 7}$$

(2)

A	$\xrightarrow{\substack{170円 \\ (12-x)人}}$	C	{	$12 - x + y - 17 = 0$	
A	$\xrightarrow{110円}$	B		$\xrightarrow{130円}$	C
12	$\xrightarrow{x人}$	+y	$\xrightarrow{y人}$	-17	$\therefore y = x + 5$

$$110x + 130(x+5) + 170(12-x) = 2900$$

$$110x + 130x + 650 + 2040 - 170x = 2900$$

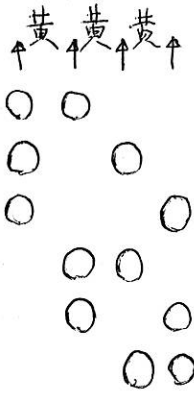
$$70x = 210$$

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

$$\therefore y = \underline{8人}$$

H 3 0 彦 技 ④

[2] (3)



∴ 6 通り

$$\begin{aligned}
 (4) \quad & \frac{3 \cdot 4 + 5 \cdot 6 + 7 \cdot 7 + 9 \cdot 3}{20} \\
 = & \frac{30 + 12 + 70 + 6}{20} \\
 = & \underline{5.9 \text{ 個}}
 \end{aligned}$$

### H 3 0 産 技 ⑤

3 (1)

$$y = x - a$$

$$y = x - 2$$

$$0 = x - 2$$

$$\therefore Q(2, 0)$$

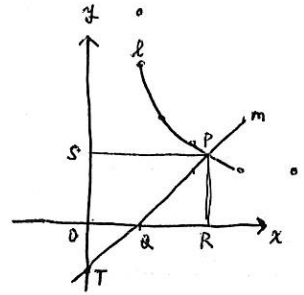
$$y = c x + d$$

$$y = -\frac{1}{2}x + d$$

$$0 = -\frac{1}{2} \cdot 2 + d$$

$$\therefore d = 1$$

$$\therefore \underline{y = -\frac{1}{2}x + 1}$$



(2)

$$a = 0$$

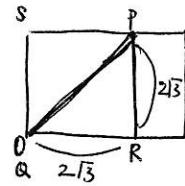
$$\begin{cases} y = \frac{12}{x} \\ y = x \end{cases}$$

$$x = \frac{12}{x}$$

$$x^2 = 12$$

$$x = 2\sqrt{3} \quad (\because x > 0)$$

$$(2\sqrt{3})^2 \div 2 = \underline{6 \text{ cm}^2}$$



(3)

$$y = \frac{12}{x}$$

$$y = \frac{12}{6} = 2$$

$$y = x - a$$

$$2 = 6 - a$$

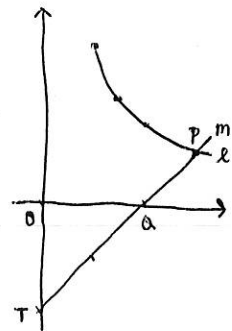
$$\therefore a = 4$$

$$\begin{cases} T(0, -4) \\ Q(4, 0) \\ P(6, 2) \end{cases}$$

$$TQ : QP = (4 - 0) : (6 - 4)$$

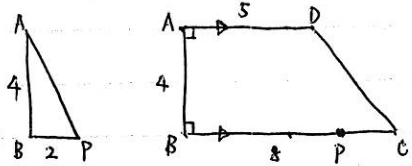
$$= 2 : 1$$

$$\therefore \underline{TQ : QP = 2 : 1}$$



# H30 産技 ⑥

④ (1)  $AP = \sqrt{4^2 + 2^2}$   
 $= 2\sqrt{5} \text{ cm}$

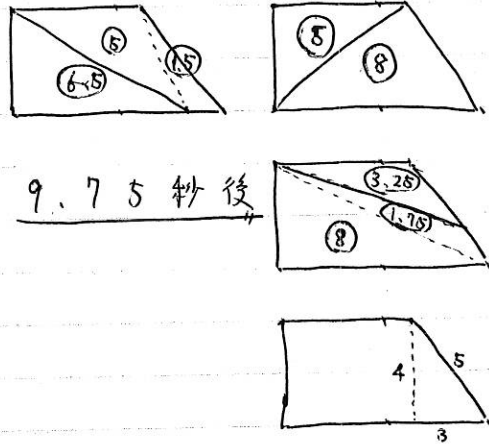


(2) ① 6.5 秒後

②  $5 + 8 = 13$

$13 \div 4 = 3.25$

$8 + 5 - 3.25 = 9.75 \text{ 秒後}$

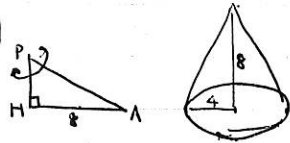


# H30産技⑦

5 (1) 円すい =  $4^2 \pi \cdot 8 \cdot \frac{1}{3} = \frac{128}{3} \pi$

回転体 =  $8^2 \pi \cdot PH \cdot \frac{1}{3} = \frac{64}{3} \pi \cdot PH$

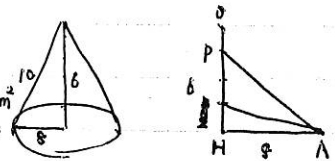
$\therefore PH = 2 \text{ cm}$



(2)  $PH = 8 \times \frac{3}{1+3} = 6$

$\sqrt{8^2 + 6^2} = 10$

$(10 \times 8 + 8 \times 8) \pi = 144 \pi \text{ cm}^2$



(3)  $O(0, 8)$

$P(0, 4)$

$H(0, 0)$

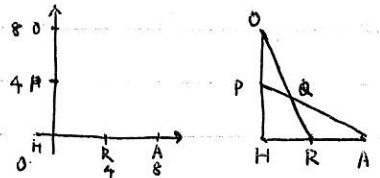
$R(4, 0)$

$A(8, 0)$

$$\begin{cases} y = -2x + 8 \\ y = -\frac{1}{2}x + 4 \end{cases}$$

$\therefore x = \frac{8}{3}, y = \frac{8}{3}$

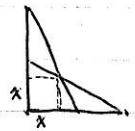
$\sqrt{(4 - \frac{8}{3})^2 + (0 - \frac{8}{3})^2} = \frac{4}{3} \sqrt{5} \text{ cm}$



(3)  $(8 - x) : x = x : (4 - x)$

別解  $(8 - x)(4 - x) = x^2$

$\therefore x = \frac{8}{3}$



(3)  $8 \times \frac{1}{1+2} = \frac{8}{3}$

別解

