

H 3 | 產技 ①

$$\begin{aligned}
 \boxed{1} \quad (1) \quad & \left(\frac{3}{4} + \frac{2}{3} \right) \div \frac{5}{12} - \frac{2}{5} \\
 & = \left(\frac{9}{12} + \frac{8}{12} \right) \times \frac{12}{5} - \frac{2}{5} \\
 & = \frac{17}{12} \times \frac{12}{5} - \frac{2}{5} \\
 & = \frac{17}{5} - \frac{2}{5} \\
 & = \frac{15}{5} \\
 & = \underline{\underline{3}}
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad & \frac{4a - 2b}{6} - \frac{5a - 7b}{3} \\
 & = \frac{4a - 2b - 2(5a - 7b)}{6} \\
 & = \frac{4a - 2b - 10a + 14b}{6} \\
 & = \frac{-6a + 12b}{6} \\
 & = \underline{\underline{-a + 2b}}
 \end{aligned}$$

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$$\begin{aligned} \text{[1] (3)} \quad & 6 a^4 b^2 \div (-2 a b)^3 \times \frac{4}{3} b^2 \\ & = \frac{6 a^4 b^2}{1} \times \frac{1}{-8 a^3 b^3} \times \frac{4 b^2}{3} \\ & = \underline{- a b} \end{aligned}$$

$$\begin{aligned} \text{(4)} \quad & \sqrt{6}(\sqrt{6} - \sqrt{2}) + \frac{6}{\sqrt{3}} + 20\sqrt{0.01} \\ & = 6 - 2\sqrt{3} + 2\sqrt{3} + 20 \times 0.1 \\ & = 6 + 2 \\ & = \underline{8} \end{aligned}$$

$$\begin{aligned} \text{(5)} \quad & \begin{cases} 3x - 5y = 11 \\ 7x + 2y = 12 \end{cases} \\ & \begin{cases} 6x - 10y = 22 \\ 35x + 10y = 60 \end{cases} \\ & \underline{41x} \quad \quad \quad = 82 \\ & \quad \quad \quad x \quad \quad \quad = 2 \\ & 7 \cdot 2 + 2y = 12 \\ & \quad \quad 14 + 2y = 12 \\ & \quad \quad \quad \quad \quad y = -1 \\ \therefore & \underline{x = 2, y = -1} \end{aligned}$$

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$$\boxed{J} (6) \quad (x - 1)^2 + 4(x - 1) = 12$$

$$(x - 1)^2 + 4(x - 1) - 12 = 0$$

$$\{(x - 1) + 6\}(x - 1) - 2\} = 0$$

$$(x + 5)(x - 3) = 0$$

$$\therefore \underline{x = -5, 3}$$

$$(7) \quad y = \frac{4}{x}$$

$$\frac{\frac{4}{4} - \frac{4}{2}}{4 - 2}$$

$$= \frac{1 - 2}{2}$$

$$= \underline{-\frac{1}{2}}$$

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2 (1)
$$\begin{cases} 120 + x = y \\ x = \frac{20}{100} y \end{cases} \therefore y = 5x$$

$$120 + x = 5x \quad \therefore x = 30$$

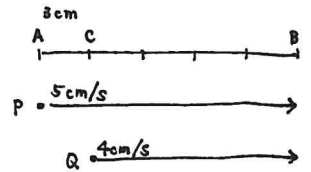
$$120 + 30 = y \quad \therefore y = 150$$

$$\therefore x = 30, y = 150$$

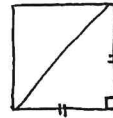
(2)
$$5x = 3 + 4x \quad \therefore x = 3$$

$$5 \cdot 3 = 15$$

$$\therefore 15 \text{ cm}$$



(3)
$$1 \quad 7$$



$$2^2 + 3^2 = 13 \neq 4^2$$

$$3^2 + 4^2 = 25 = 5^2$$

(4)
$$2 + 7 = 9$$

$$9 + 9 = 18$$

$$30 \div 2 = 15$$

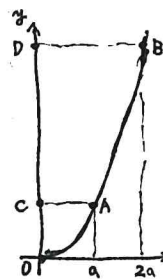
40分以上 60分未満は 10番目か 5 18番目

$$(40 + 60) \div 2 = 50$$

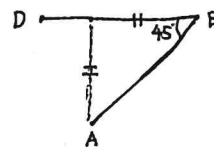
$$\therefore 50 \text{ 分}$$

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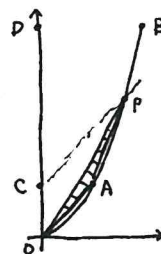
③ (1) $y = \frac{1}{3} x^2$
 $A(3, 3)$
 $B(6, 12)$
 化簡 $\approx \frac{12}{6} = 2$
 $y = 2x + b$
 $3 = 2 \cdot 3 + b \quad \therefore b = -3$
 $\therefore y = 2x - 3$ \rightarrow



(2) $A(a, \frac{1}{3} a^2)$
 $B(2a, \frac{4}{3} a^2)$
 $2a - a = \frac{4}{3} a^2 - \frac{1}{3} a^2$
 $\therefore a = 1$ ($\because a > 0$) \rightarrow

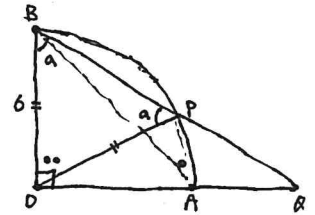


(3) $\triangle OAP$
 $= \triangle OAC$ ($\because OA \parallel CP$)
 $= \frac{1}{2} \cdot \frac{1}{3} a^2 \cdot a$
 $= \frac{1}{6} a^3$ \rightarrow

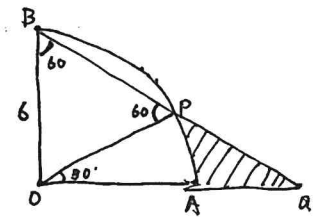


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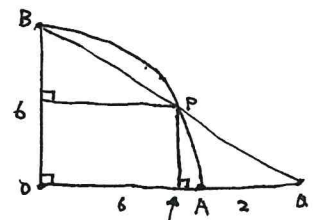
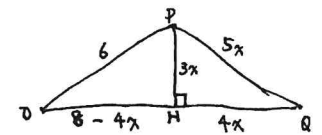
④ (1) $\angle O P B = \angle O B P = \alpha^\circ$
 $\angle B O P = 180^\circ - 2\alpha^\circ$
 $\angle B A P$
 $= \frac{1}{2} \angle B O P \quad (\because \widehat{B P})$
 $= 90^\circ - \alpha^\circ$



(2) $O Q = 6\sqrt{3}$
 $\triangle O B P$ は正三角形
 $\triangle O B P$
 $= \frac{1}{2} \cdot 6 \cdot 3\sqrt{3}$
 $= 9\sqrt{3}$
 $\triangle O B Q$
 $= \frac{1}{2} \cdot 6\sqrt{3} \cdot 6$
 $= 18\sqrt{3}$
 $\triangle O A P$
 $= 6^2 \pi \times \frac{30^\circ}{360^\circ}$
 $= 3\pi$
 S
 $= 18\sqrt{3} - 9\sqrt{3} - 3\pi$
 $= 9\sqrt{3} - 3\pi$



(3) $B Q = \sqrt{6^2 + (6 + 2)^2} = 10$
 $\triangle O B Q \sim \triangle H P Q$
 $P H = 3x, H Q = 4x$
 $P Q = 5x, O H = 8 - 4x$
 $(8 - 4x)^2 + (3x)^2 = 6^2$
 $\therefore x = \frac{14}{25}, -2$
 $\therefore 5x = \frac{14}{5} \quad (\because x > 0)$

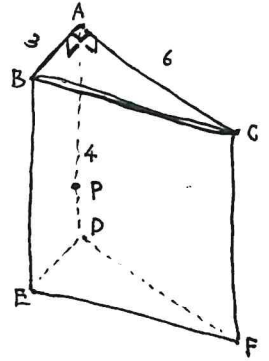


$25x^2 - 64x + 64 = 6^2$
 $(5x - \frac{32}{5})^2 = (\frac{14}{5})^2$

H 3 1 產技 ⑦

5 (1)

$$\begin{aligned}
 & \triangle D E F \\
 &= \frac{1}{2} \cdot 3 \cdot 6 \\
 &= 9 \\
 & P - D E F \\
 &= \frac{1}{3} \cdot 9 \cdot 2 \quad (\because D P = 2) \\
 &= \underline{6} \rightarrow
 \end{aligned}$$



(2)

$$\begin{aligned}
 A E &= \sqrt{3^2 + 4^2} = 5 \\
 \triangle A E C \\
 &= \frac{1}{2} \cdot 5 \cdot 6 \\
 &= \underline{15} \rightarrow
 \end{aligned}$$

(3)

$$\begin{aligned}
 \triangle E D P \sim \triangle E F C \\
 3 : x &= (3 + 6) : 4 \\
 \therefore \underline{\frac{4}{3}} \rightarrow
 \end{aligned}$$

