

湘南学園 中学校 (B日程) 2005

$$\begin{aligned} \text{I (1)} \quad & 83 - 17 \times 3 + 87 \div 3 \\ & = 83 - 51 + 29 \\ & = 32 + 29 \\ & = \underline{\underline{61}} \end{aligned}$$

$$\begin{aligned} \text{(2)} \quad & 3.2 \times 8 - (3 - 2.04) \div 0.3 \\ & = 15.36 - 3.2 \\ & = \underline{\underline{12.16}} \end{aligned}$$

$$\begin{array}{r} 3.2 \\ \times 4.8 \\ \hline 256 \\ 128 \\ \hline 15.36 \end{array}$$

$$\begin{aligned} \text{(3)} \quad & \left\{ \frac{2}{3} - \left(\frac{7}{12} + \frac{2}{5} \right) \times \frac{2}{3} \right\} \div \frac{1}{9} \\ & = \left(\frac{2}{3} - \frac{35+24}{60} \times \frac{2}{3} \right) \times 9 \\ & = \left(\frac{2}{3} - \frac{59}{30} \times \frac{2}{3} \right) \times 9 \\ & = \frac{60-59}{90} \times 9 = \underline{\underline{\frac{1}{10}}} \end{aligned}$$

$$\begin{aligned} \text{(4)} \quad & \frac{4}{7} \times 1.96 \div (2.05 - \frac{1}{4}) \times 1 \frac{2}{3} \times 18 \\ & = \frac{4}{7} \times \frac{196}{100} \div 0.3 \times \frac{5}{3} \times 18 \\ & = \frac{28}{25} \times \frac{2}{3} \times \frac{5}{3} \times 18 \\ & = 28 \times 4 = \underline{\underline{112}} \end{aligned}$$

$$\text{II (1)} \quad 5 \text{ cm} \times 25000 = \underset{\text{km}}{125} \underset{\text{m}}{000} \text{ cm}$$

$$\underline{\underline{A. 1.25 \text{ km}}}$$

(2) $\left. \begin{array}{l} 5 \text{ で割り、} 4 \text{ 余る} \rightarrow 1 \text{ たす} \text{ と } 5 \text{ で割り切れる (5 の倍数)} \\ 3 \text{ ,, } 2 \text{ ,, } \rightarrow \text{ ,, } 3 \text{ ,, } \text{ (3 の倍数)} \end{array} \right\}$
 \downarrow
 ある数に 1 をたすと 5 と 3 の公倍数 \rightarrow 15 の倍数

ある数は 15 の倍数 - 1

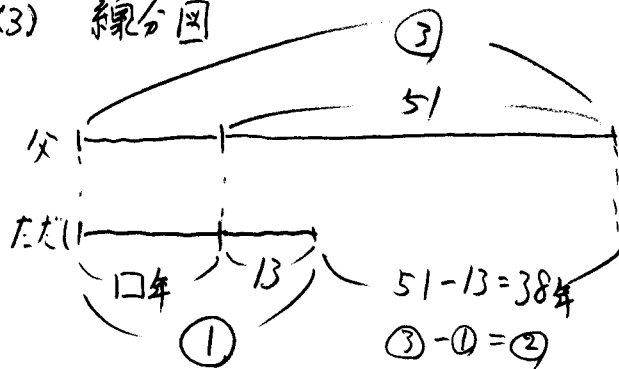
$$3 \text{ が多いので } 100 \div 15 = 6 \cdots 10 \rightarrow 15 \times 6 = 90$$

$$15 \times 7 = 105$$

$$\underline{\underline{A 104}}$$

\swarrow
 104

(3) 線分図



$$38 \div 2 = 19 \dots ①$$

$$19 - 13 = 6$$

A. 6年後

(4) $300 \times 0.05 = 15g \dots 5\%$ の食塩水の中の食塩

$$15 \div (300 + 200) = 0.03$$

A. 3%

(5) $1000 - 181 = 819$ 円 \dots 原価 $\times 1.05$

$$819 \div 1.05 = 780$$

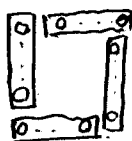
A. 780 円

(6) $12 \div 4 = 3$ 時間 } 合計 7 時間で $12 \times 2 = 24 \text{ km}$
 $12 \div 3 = 4$ " }

$$24 \div 7 = 3 \frac{3}{7}$$

A. 毎時 $3 \frac{3}{7} \text{ km}$

(7)



$$72 \div 4 = 18 \rightarrow 18 + 1 = 19 \dots \text{左, 上に } 15 \text{ 個}$$

$$19 \times 19 = 361$$

A. 361 個

(8) 百の位 十の位 一の位

$$\left. \begin{array}{l} 1 < \begin{array}{l} 0 \\ 2 \\ 3 \end{array} < \begin{array}{l} 2 \\ 3 \\ 0 \\ 2 \end{array} \end{array} \right\}$$

$$3 \times 3 \times 2 = 18$$

$$2 <$$

1 と同じ

$$3 <$$

5 "

A. 18 通り

③ (1)



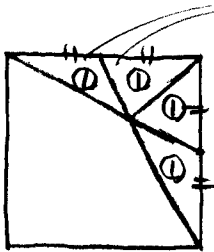
$$- \text{Quarter Circle} = 8^2 \times 3.14 \times \frac{1}{4} - 4^2 \times 3.14 \times \frac{1}{8}$$

$$= (16 - 8) \times 3.14$$

$$= 8 \times 3.14 = 25.12$$

A. 25.12 cm²

(2)



底辺と高さが等しいので面積も等しい。

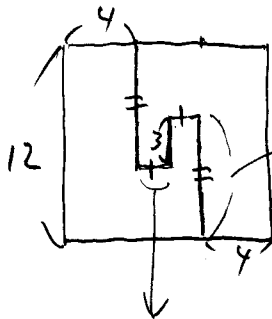
$$\text{③} = 5 \times 10 \times \frac{1}{2} = 25 \text{ cm}^2$$

$$\text{②} = 25 \times \frac{2}{3} = \frac{50}{3} = 16\frac{2}{3} \quad \underline{\text{A. } 16\frac{2}{3} \text{ cm}^2}$$

④ 1辺 12 cm の立方体の半分

$$12 \times 12 \times 12 \times \frac{1}{2} = 864$$

体積 864 cm³



$$\square \times 2 - 3 = 12$$

$$\square \times 2 = 15$$

$$\square = 7.5$$

$$(12 - 4 \times 2) \div 2 = 2 \text{ cm}$$

1つの立体の表面積 = 立方体の半分 + Lの部分

$$= 12 \times 12 \times 6 \times \frac{1}{2} + (7.5 \times 2 + 2 \times 2 + 3) \times 12$$

$$= 432 + 264$$

$$= 696$$

表面積 696 cm²

5 (1)

図1より

$$\text{○} = \text{○} \text{○} \text{□} \rightarrow \text{○} = \text{○} \text{○} \text{□}$$

図2より

$$\begin{aligned} \text{○} \text{○} \text{○} &= \text{□} \text{□} \text{□} \cdots \text{□} \\ \downarrow \\ \text{○} \text{○} \text{○} \text{○} \text{□} &= \text{□} \text{□} \text{□} \cdots \text{□} \end{aligned}$$

$$\text{○} \times 4 = \text{□} \times 8 \rightarrow \text{○} = \text{□} \times 2$$

$$\begin{aligned} \text{○} &= \text{○} \text{○} \text{□} \\ &= \text{□} \text{□} \text{□} \text{□} \text{□} \end{aligned}$$

A $\begin{cases} \text{サカキ} = \text{おもり} 2\text{個} \\ \text{リンゴ} = \text{おもり} 5\text{個} \end{cases}$

(2)

$$\begin{aligned} \text{○} + \text{○} &= \text{○} + \text{○} \\ \downarrow \quad \downarrow \\ \text{□} \times 2 + \text{○} &= \text{□} \times 5 + \text{○} \\ \downarrow \\ \text{○} &= \text{□} \times 3 \end{aligned}$$

$$\text{□} \times 2 + \text{□} \times 3 + \text{○} = \text{□} \times 5 + \text{○}$$

$$\text{□} \times 5 + \text{□} \times 3 + \text{○} = \text{□} \times 2 + \text{○} + (\text{□} \times 6)$$

(3)

$$\text{□} \times 8 + \text{○} = (\text{□} \times 2 + \text{○}) \times 3$$

$$\text{□} \times 8 + \text{○} = \text{□} \times 6 + \text{○} + \text{○} + \text{○}$$

$$\text{○} \times 2 = \text{□} \times 2$$

$$\text{○} = \text{□}$$

$$\text{○} = \text{□} \times 3 + \text{○} = \text{□} \times 4$$

A. 6個

A. 4個

⑥ (1) グラスより 5分で 2cm

$$\frac{16\text{cm}^3 \times 5}{(10 \times 2)} = 4 \dots\dots \text{ア}$$

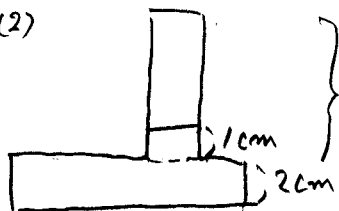
②の下の部分に 5分間で 側面積
 入る水の量

その後 3分で 満水 (8-2=6cm 上昇)

$$16 \times 3 \div (4 \times 6) = 2 \dots\dots \text{イ}$$

$$\text{ア} \begin{cases} \text{ア} 4\text{cm} \\ \text{イ} 2\text{cm} \end{cases}$$

(2)



この部分には $6\text{cm} \div 3\text{分} = 2\text{cm/分}$ の速さで上昇

$$1\text{cm} \div 2 = 0.5\text{分} \dots\dots 30\text{秒}$$

A. 5分30秒

(3) ①は $16 \div 32 = 0.5\text{cm} \dots\dots$ 1分間に 0.5cm 下がる

②は 上の段で $6\text{cm} \div 3\text{分} = 2\text{cm} \dots\dots$ 1分で 2cm ずつ上がる

5分後の時 (これから水面の高さを旅人算)

$$\left. \begin{array}{l} \text{①は } 8\text{cm} - 0.5 \times 5 = 5.5\text{cm} \\ \text{②は } 2\text{cm} \end{array} \right\} \text{差 } 5.5 - 2 = 3.5\text{cm}$$

1分ごとに $0.5 + 2 = 2.5\text{cm}$ ずつ近づく

$$3.5 \div 2.5 = \frac{7}{2} \div \frac{5}{2} = \frac{7}{5} = 1.4\text{分} = 1\text{分}24\text{秒}$$

$$5\text{分} + 1\text{分}24\text{秒} = 6\text{分}24\text{秒}$$

A. 6分24秒