

$$[1] (1) 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \div (12 \times 84) - 60$$

$$= \frac{9 \times 8 \times \overset{1}{\cancel{7}} \times \overset{1}{\cancel{6}} \times 5 \times \overset{1}{\cancel{4}} \times \overset{1}{\cancel{3}} \times \overset{1}{\cancel{2}}}{\begin{array}{r} \cancel{12} \times \cancel{84} \\ \cancel{12} \quad \cancel{2+} \\ \quad \quad \cancel{7+} \\ \quad \quad \quad \cancel{11} \end{array}} - 60$$

$$= 360 - 60$$

$$= \underline{\underline{300}}$$

$$(2) 31.4 \times 2.5 + 31.4 \times 25 + \underline{31.4} \times 2.5$$

$$= 31.4 \times 2.5 + 31.4 \times 25 + \underline{31.4 \times 10 \times 2.5}$$

$$= 31.4 \times (2.5 + 25 + 25) = 31.4 \times 52.5 = \underline{\underline{1648.5}}$$

$$(3) 2 \times \left[1\frac{13}{27} - \left\{ 3 - (0.25 \div 0.75 + \frac{2}{3} \times 2) \right\} \right]$$

$$= 2 \times \left[\frac{40}{27} - \left\{ 3 - \left(\frac{1}{4} \times \frac{4}{3} + \frac{4}{3} \right) \right\} \right]$$

$$= 2 \times \left[\frac{40}{27} - \left\{ 3 - \frac{5}{3} \right\} \right] = 2 \times \left[\frac{40}{27} - \frac{\overset{36}{\cancel{4}}}{\overset{27}{\cancel{3}}} \right] = 2 \times \frac{4}{27} = \underline{\underline{\frac{8}{27}}}$$

$$(4) \frac{3}{10} + \frac{9}{100} + \frac{27}{1000} + \frac{81}{10000}$$

$$= \frac{3000 + 900 + 270 + 81}{10000}$$

$$= \underline{\underline{\frac{4251}{10000}}}$$

[2]

$$(1) \frac{1}{3} - (\square \div 2 - \frac{1}{2} \div 2) \times 3 = \frac{5}{12}$$



$$\textcircled{2} = \frac{3}{2} \div 2 = \frac{3}{4}$$

$$\frac{1}{3} - \textcircled{4} = \frac{5}{12} \quad \textcircled{4} = \frac{1}{3} - \frac{5}{12} = \frac{4}{12} = \frac{1}{3}$$

$$\textcircled{3} \times 3 = \frac{5}{4} \quad \textcircled{3} = \frac{5}{4} \div 3 = \frac{5}{12}$$

$$\textcircled{1} - \frac{3}{4} = \frac{5}{12} \quad \textcircled{1} = \frac{5}{12} + \frac{3}{4} = \frac{14}{12} = \frac{7}{6}$$

$$\square \div 2 = \frac{7}{6} \quad \square = \frac{7}{6} \times 2 = \frac{7}{3} = 2\frac{1}{3}$$

(2) 外角の和は何角形でも $360^\circ = 180^\circ \times 2 \xrightarrow{\text{6倍}} 180^\circ \times 2 \times 6 = 180^\circ \times 12$

1つの頂点から対角線をひいて 12個の三角形 に分けられ。

A. 十四

(3) 左から

1 2 3 4
K - A - A - N
 \ N - A
 N - A - A

1 2 3 4
N - A - A - K
 \ K - A
 K - A - A

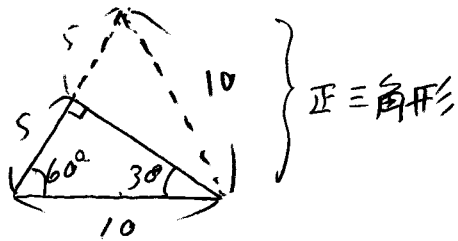
1 2 3 4
A - A - K - N
 \ N - K
 K - A - N
 N - A
 N - A - K
 \ K - A

A. 12 (通り)

(4) 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610
前2つの和が次の数
8+13 21+34 55+89 144+233
13+21 34+55 89+144 233+377

A. 610

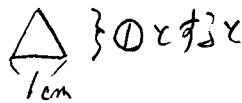
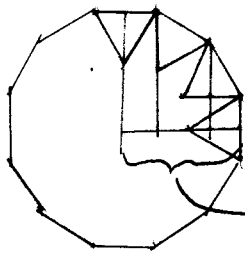
[3]
(1)



$$= 5 \times 8.6 \times \frac{1}{2} - 5 \times 5 \times 3.14 \times \frac{90}{360} = 1.875$$

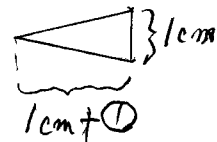
A. 1.875 (cm²)

(2)



1 cm + ①

12角形を12等分した三角形は



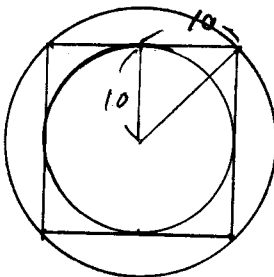
$$\begin{aligned} 12\text{角形} &= \triangle \times 12 \\ &= 1 \times (1 + \textcircled{1}) \times \frac{1}{2} \times 12 \\ &= 6 + \textcircled{1} \times 6 \end{aligned}$$

$$\triangle \times 12 = 1 \times \textcircled{1} \times 12 \times \frac{1}{2} = \textcircled{1} \times 6$$

$$\begin{aligned} \text{斜線部} &= 6 + \textcircled{1} \times 6 - \textcircled{1} \times 6 \\ &= 6 \end{aligned}$$

A. 6 cm²

(3)



で考えると正方形の面積は $20 \times 20 = 400$

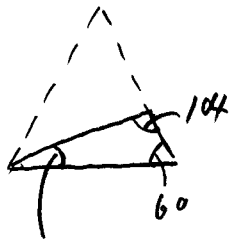
外円の面積 = 半径 × 半径 × 3.14

$$\text{半径} \times \text{半径} = \text{正方形の面積} = 400 \div 2 = 200$$

$$\text{外円} - \text{内円} = 200 \times 3.14 - 10 \times 10 \times 3.14 = 314$$

A. 314 cm²

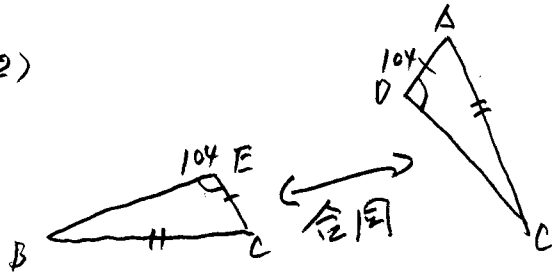
[4] (1)



$$180 - (104 + 60) = 16$$

A 16度

(2)



$$180 - 104 = 76$$

A. 76度

[5] (1) 全体を1とすると Aは1日に $\frac{1}{900}$ Cは $\frac{1}{1200}$

$$360日 \quad \left(\frac{1}{900} + \frac{1}{1200}\right) \times 360 = \frac{7}{10}$$

A. 7割

(2) Bは $1 - \frac{7}{10} = \frac{3}{10}$ の仕事を1日に $\frac{1}{1000}$

$$\frac{3}{10} \div \frac{1}{1000} = 300日 \quad 360 - 300 = 60$$

A. 60日間

$$(3) 1 \div \left(\frac{1}{900} + \frac{1}{1000} + \frac{1}{1200}\right)$$

$$= 1 \div \left(\frac{20}{18000} + \frac{18}{18000} + \frac{15}{18000}\right)$$

$$= 1 \times \frac{18000}{53} = 339 \frac{33}{53}$$



A. 340日間

(6) ④ 外円:内円 = 4:1 → 円周も 4:1 (相似)

$$1\text{周するの}に 360 \times \frac{1}{4} = 90^\circ \text{ 動く}$$

$$90 \div 2 = 45$$

A. 45秒後

(2) ^{(1)の時} 最初  →  270度動く

$$270 \times \frac{30}{45} = 180^\circ \rightarrow \img alt="Diagram of a circle with a center dot and a point P on the circumference. A curved arrow indicates clockwise rotation." data-bbox="485 255 555 305"/>$$

A. 180度

(3) 3分30秒 = 210秒

$$210 \div 45 = 4\frac{2}{3}$$

A. $4\frac{2}{3}$ 回転

(4) $\boxed{1\text{回転の角度}} \times \frac{2}{3} = 90^\circ$

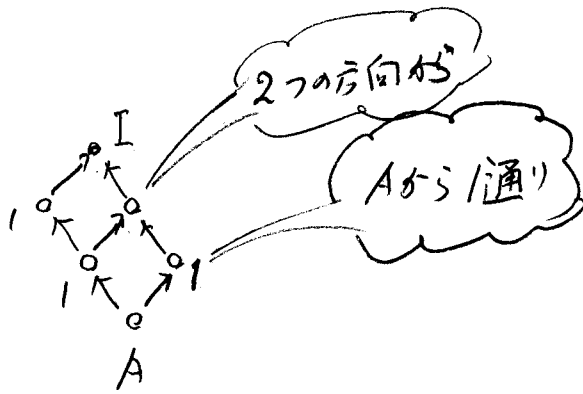
$$1\text{回転の角度} = 90 \div \frac{2}{3} = 54$$

$$\text{外円} \times \frac{54}{360} \text{ で 1回転}$$

$$4\text{cm} \times \frac{54}{360} = 0.6$$

A. 0.6cm

{7}
(1)



Iへは \nearrow 1通り
 \nwarrow 2通り

合計3通り

A. 3通り

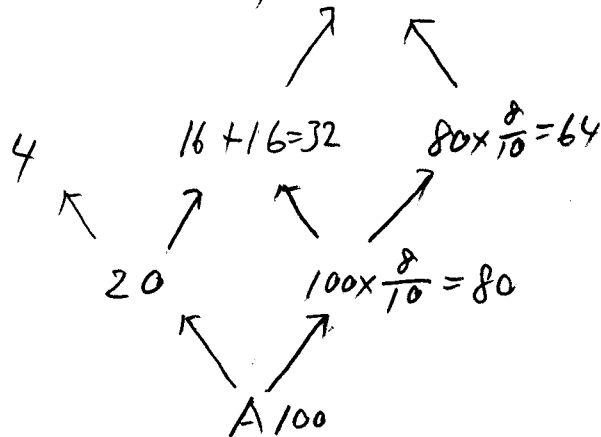
(2) AからIまで3通り IからDまで4同様に3通り

Iへの1通りにつき3通りあるので $3 \times 3 = 9$

A. 9通り

(3)

$$32 \times \frac{3}{4} + 64 \times \frac{1}{4} = 24 + 16 = 40$$

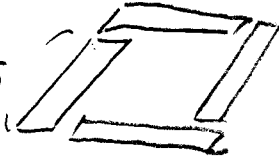


A. 40匹

(8)

(1)

$$30-5=25$$



$$\text{4条边} \times \text{上下} = 25 \times 4 \times 2 = 200 \text{ cm}$$

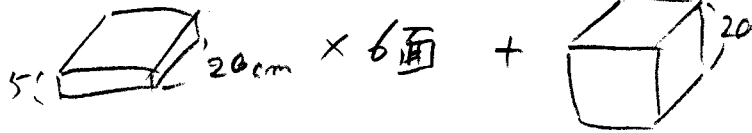


$$30-5 \times 2 = 20$$

$$20 \times 4 = 80$$

$$\underline{A. 280 \text{ cm}}$$

(2)



$$= 20 \times 20 \times 5 \times 6 + 20 \times 20 \times 20$$

$$= 12000 + 8000 = 20000$$

$$\underline{A. 20000 \text{ cm}^3}$$