

2005

$$\begin{aligned} (2) \quad & \frac{1}{46} + \frac{2}{115} - \frac{4}{161} \\ & = \frac{5 \times 7}{46 \times 5 \times 7} + \frac{2 \times 2 \times 7}{115 \times 2 \times 7} + \frac{4 \times 2 \times 5}{161 \times 2 \times 5} \quad 23 \mid \frac{46, 115, 161}{2, 5, 7} \\ & = \frac{35+28-40}{1610} = \frac{23}{1610} = \frac{1}{70} \end{aligned}$$

$$\begin{aligned} & \text{(4) } 1110 \times 0.3 + 9900 \times 0.03 + 49000 \times 0.003 \\ &= 111 \times 3 + 99 \times 3 + 49 \times 3 \\ &= (111 + 99 + 49) \times 3 \\ &\quad \underbrace{\hspace{1cm}}_{210} \\ &= 259 \times 3 \\ &= 777 \end{aligned}$$

$$\left\{ \right\} = \frac{1}{2} \div 1.6 = \frac{1}{2} \times \frac{5}{8} = \frac{5}{16}$$

$$(\quad) \div 2\frac{8}{15} = \frac{5}{16}$$

$$= \frac{5}{16} \times 2 \frac{8}{15} = \frac{5}{16} \times \frac{38}{15} = \frac{19}{24}$$

$$2.625 - \square = \frac{19}{24}$$

$$(2\frac{5}{8})$$

$$\square = 2\frac{5}{8} - \frac{19}{24} = 1\frac{39}{24} - \frac{19}{24} = 1\frac{20}{24}$$

A. 1 $\frac{5}{6}$

A 50

(3) 50のうち余りの5を取ると $50-5=45 \rightarrow$ わり切れる数 $\begin{matrix} 1 & 3 & 5 \\ 45 & 15 & 9 \end{matrix}$

余りが5なので5より大きい数が答
 $45+15+9=69$

A 69

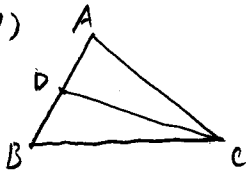
(4) 10位は3, 9, 7, 1の4つをくり返すので

$$150 \div 4 = 37 \text{ 組 } 2 \text{ と余り}$$

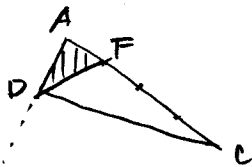
これは $(3, 9, 7, 1), (3, 9, 7, 1), \dots, (3, 9, 7, 1)$ となるので
 1組 2組 3組 \dots 37組

A 9

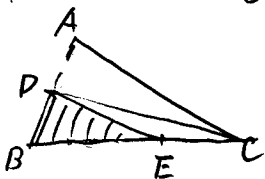
[3] (1)



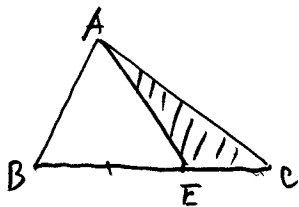
$$\triangle ADC = \triangle BDC = 24 \times \frac{1}{2} = 12 \text{ cm}^2$$



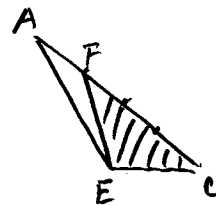
$$\triangle ADF = \triangle ADC \times \frac{1}{4} = 12 \times \frac{1}{4} = 3 \text{ cm}^2$$



$$\triangle DBE = \triangle BDC \times \frac{2}{3} = 12 \times \frac{2}{3} = 8 \text{ cm}^2$$



$$\triangle AEC = 24 \times \frac{1}{3} = 8$$

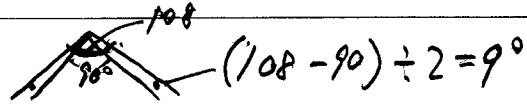
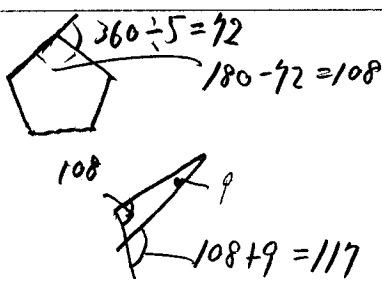


$$\begin{aligned} \triangle FEC &= \triangle AEC \times \frac{3}{4} \\ &= 8 \times \frac{3}{4} = 6 \end{aligned}$$

$$\begin{aligned} \triangle DEF &= \triangle ABC - \triangle ADF - \triangle DBE - \triangle FEC \\ &= 24 - 3 - 8 - 6 \\ &= 7 \end{aligned}$$

A 7

(2)

A 117°[4] (1) $\triangle ABC$ は正三角形 $\rightarrow 60^\circ$

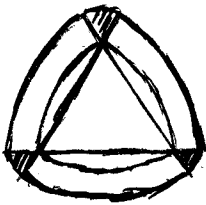
(2)



$$\begin{aligned} & \text{直径} \\ & (20\text{cm} \times 3.14 \times \frac{60}{360}) \times 3 \text{個} \\ & = 20 \times 3.14 \times \frac{1}{2} \times 3 = 31.4 \end{aligned}$$

A 31.4 cm

(3)



$$\begin{aligned} & 11 \times 2 \times 3.14 \times \frac{1}{6} \times 3 \text{個} + 2 \times 3.14 \times \frac{1}{2} \\ & = 11 \times 3.14 + 1 \times 3.14 \\ & = 12 \times 3.14 = 37.68 \end{aligned}$$

A 37.68 cm

[5] (1) (○ ○ ● ● ● ● ● ●) 6個 7°

$$21 \div 6 = 3 \text{ 個 } 3 \rightarrow (\quad) (\quad) (\quad) (\quad) (\quad) (\quad)$$

A 20番白 21番黒(2) $100 \div 6 = 16 \text{ 個 } 4$ (17° - 7° に白 2) $\times 16$ 7°

$$\rightarrow 2 \times 16 + 2 = 34 \quad \text{A 34個}$$

$$\begin{aligned} (3) \quad 399 \div 6 &= 66 \text{ 個 } 3 \\ 4 \times 66 + 1 &= 265 \end{aligned}$$

$$\begin{aligned} 600 \div 6 &= 100 \\ 4 \times 100 &= 400 \end{aligned}$$

$$400 - 265 = 135$$

A 135個

[6] (1)
$$\begin{array}{r} 3 \overline{)81} \\ 3 \overline{)27} \\ 3 \overline{)9} \\ 3 \end{array} \quad 3 \times 3 \times 3 \times 3 \rightarrow \underline{A. 4}$$

(2) $[2, 16] = 4$
$$\begin{array}{r} 2 \overline{)16} \\ 2 \overline{)8} \\ 2 \overline{)4} \\ 2 \end{array} \quad [2, 32] = 5 \quad 4+5=9$$

$9 = [2, \square]$
$$\square = \underbrace{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}_{\substack{4 \quad 8 \quad 16 \quad 32 \quad 64 \quad 128 \quad 256 \quad 512}} = 512$$

A. 512

(3) $[4, 256] = 4$ $[4, 16] = 2$
 $4 - \{ \} = 2$ $[4, \square] = 2$

A. 16

(4)
$$\begin{array}{r} 5 \overline{)125} \\ 5 \overline{)25} \\ 5 \end{array} \quad [\square, 125] = 3 \quad \begin{array}{r} 5 \overline{)625} \\ 125 \end{array} \quad [5, 625] = 4$$

$3+4=7$

$$\underbrace{5 \times 5 \times 5}_{125} \times \underbrace{5 \times 5 \times 5}_{625} = 78125$$

A. 78125

[7] (1) $1+2+3+4+5+6+7+8+9=45 \rightarrow 1 \text{ 回転 } 45 \text{ 分}$

$$\begin{array}{r} 45+1+2+3 \\ \hline 46 \quad 48 \quad 51 \end{array} \rightarrow 48 \text{ 分をすぎ } 51 \text{ 分をすぎ } 3$$

A. 3

(2) 1回転 τ 分 $1+2+3+4+7+8+9=34$

$$\begin{array}{r} 3 \quad 6 \quad 10 \quad 17 \quad 25 \quad 34 \end{array}$$

$120 \text{ 分} \div 34 \text{ 分} = 3 \text{ 回転 } 18 \text{ 分} \rightarrow 3 \text{ 回転 } \tau 1 \sim 7 + 8 \text{ 分}$

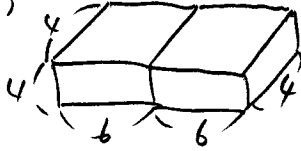
A. 8

(3) $45 \text{ 分} \times 3 + \underbrace{1+2+3+4+5+6+7+1}_{28} = 135 + 29 = 164 \text{ 分} = 2 \text{ 時間 } 44 \text{ 分}$

A. 2時間44分後

8

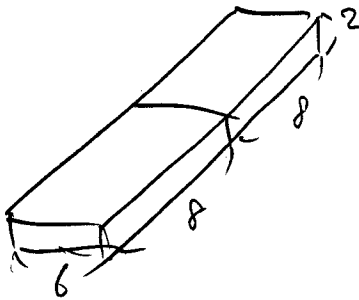
(1)



$$(4 \times 4 + 12 \times 4 + 12 \times 4) \times 2 = 224$$

$$\underline{A 224 \text{ cm}^2}$$

(2) 切断面の面積を大きく 接着面の面積を小さくする。



$$(2 \times 6 + 16 \times 6 + 16 \times 2) \times 2 = 280$$

$$\underline{A 280 \text{ cm}^2}$$