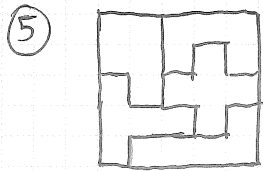


① ABECD

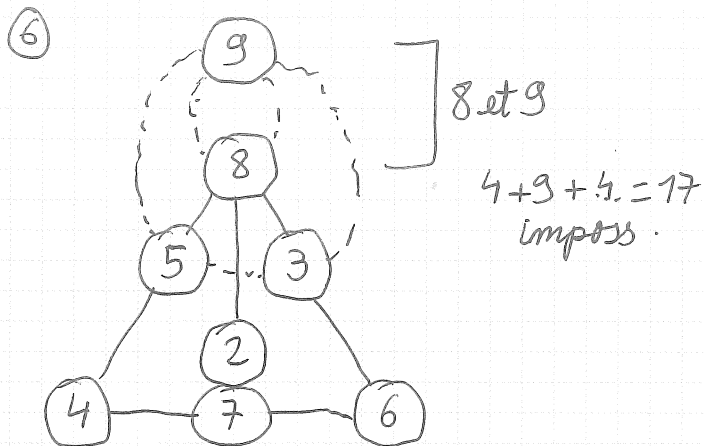
② A: 60 L: 58

③  $3! = \underline{6}$

④ Extrémités: 5



Le L en 1<sup>ère</sup>.



⑦  $L \times l$  carreaux.

$$2L + 2l - 4 = (L-2)(l-2)$$

$$Ll - 4(L+l) + 8 = 0$$

$$Ll = \frac{4L-8}{L-4} = 4 + \frac{8}{L-4}$$

$$L = 8 \quad l = 6$$

$$L = 12 \quad l = 5$$

~~48 et 60~~ 48 et ~~60~~

⑧ 2 0 1 7 7 : 2 0 ...

$$2017 \equiv 2 [5]$$

→ 0

⑨  $v$ : vitesse de Najat

$c$ : " du courant

$$v+c = 1600/15 = 6400/60$$

$$v = 1600/20 = 4800/60$$

$$c = 1600/60$$

$$v-c = 3200/60 = 1600/30$$

→ 30 minutes

⑩  $R=1$  donc  $3N \equiv 4 \rightarrow N=8$

$$3A+2 \equiv 4E [10] \rightarrow A \text{ pair}$$

$$(A,E) = (0,3) \text{ ou } (2,7) \text{ ou } (4,6) \text{ ou } (6,0) \text{ ou } (6,5) \quad \text{OK}$$

$$3E \equiv 4A+3 [10]$$

$$A = 2a \quad E = 2e+1$$

$$3a+1 \equiv 4e+2 [5]$$

$$3a+e \equiv 1 [5]$$

$$3e \equiv 4a [5] \rightarrow e \equiv 3a [5]$$

$$\rightarrow 6a \equiv 1 [5] \rightarrow a=1 \text{ et } A=2$$

$$\rightarrow e=3 \text{ et } E=7$$

$$3 \times V \equiv 1L28 = 4 \times L28V71$$

$$3 \times 28 = 84 \quad 4 \times 71 = 284$$

$$3L \equiv 4V+2 [10] \quad L \text{ pair}$$

$$3 \times 71 = 213 \quad 4 \times 28 = 112$$

$$3V+2 \equiv 4L+1 [10] \quad V \text{ impair}$$

~~$$L=3 \rightarrow V=1$$~~

$$L=4 \rightarrow V=5$$

$$L=6 \rightarrow V=1 \text{ imp.}$$

$$3 \times 571428 = 4 \times 428571$$

$$1714284 \quad 4 \times 428571$$

$$1714284$$

OK

→ 571428

⑪ → triangles d'hex. qui ne se touchent pas.  
 $3 \times 7 = 21$  2 dans les coins + 6 dans l'hexagone  $\rightarrow 3 \times 8 = 24$   
restant

⑫

$$\left. \begin{aligned} x+y &= 7xy \\ x-y &= 3xy \end{aligned} \right\} \rightarrow \begin{aligned} x &= 5xy \rightarrow y = 1/5 \\ y &= 2xy \rightarrow x = 1/2 \end{aligned}$$

$$x/y = \frac{5}{2} = K xy$$

$$K = 1/y^2 = \underline{25}$$

⑬ A: prix à l'achat

$$\frac{A-21}{A} \times 100 = A \quad A^2 = 100(A-21)$$

$$A = 10a \rightarrow a^2 = 10a - 21 \rightarrow a^2 - 10a + 21 = 0$$

$$a = 5 \pm \sqrt{25 - 21} = 5 \pm 2 \rightarrow 3 \text{ et } 7$$

$$A = 30 \text{ ou } 70$$

$$A - 21 = \underline{9 \text{ ou } 49} \quad (2 \text{ sol}^{\circ})$$

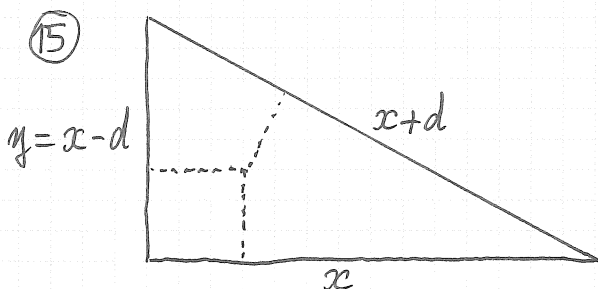
⑭  $a-d, a, a+d$ .  $a = 6$

$$2 [6(6-d) + 6(6+d) + (6-d)(6+d)] = 166$$

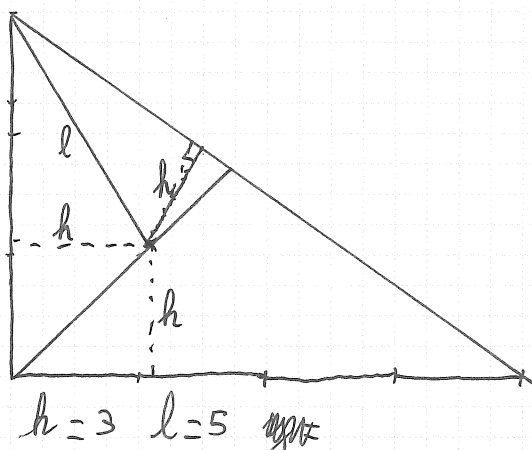
$$3 \times 36 - d^2 = 83 \quad d^2 = 108 - 83 = 25 \quad d = 5$$

3 arêtes: 1, 6, 11

Volume:  $66 \text{ m}^3$



$$\left. \begin{aligned} (x-d)^2 + x^2 &= (x+d)^2 \\ 2x^2 - 2dx &= x^2 + 2dx \\ x &= 4d \\ \% (3, 4, 5) \end{aligned} \right\} \begin{aligned} x &= 4 \times 392 \\ &= \underline{1568} \end{aligned}$$



$$\begin{aligned} h/l &= 3/5 \quad h = 504 \quad l = \frac{2520}{3} = 840 \\ l^2 &= h^2 + (y-h)^2 \\ 840^2 &= 504^2 + (y-504)^2 \\ 840 &= \cancel{2520} \quad 84 \times 10 \\ 504 &= 84 \times 6 \\ (y-504)^2 &= 84^2 \times 8^2 \quad y-504 = 84 \times 8 \\ y &= 84 \times 14, \quad x = \frac{4y}{3} = 4 \times 28 \times 14 \quad \neq \end{aligned}$$

$$\textcircled{16} \quad a, ka, k^2 a$$

$$k^2 a + a = 2(ka + 8) \rightarrow a = \frac{16}{k^2 + 1 - 2k} = \frac{16}{(k-1)^2}$$

$$\frac{16}{(k-1)^2}, \quad \frac{16k}{(k-1)^2} + 8, \quad \frac{16k^2}{(k-1)^2} + 64$$

$$a(k^2 a + 64) = (ka + 8)^2$$

$$k^2 a^2 + 64a = k^2 a^2 + 16ka + 64$$

$$4a = ka + 4$$

$$\frac{64}{(k-1)^2} = \frac{16k}{(k-1)^2} + 4$$

$$\frac{16-4k}{(k-1)^2} = 1$$

$$(k-1)^2 = 16 - 4k \quad k^2 + 2k - 15 = 0$$

$$k = -1 \pm \sqrt{16} = -5 \text{ ou } 3$$

$$k = -5: \quad a = 16/36 = 4/9$$

$$\left( \frac{4}{9} \quad -\frac{20}{9} \quad \frac{100}{9} \right)$$

$$k = 3: \quad a = 4$$

$$\left( \begin{array}{ccc} 4 & 12 & 36 \\ 4 & 20 & 36 \\ 4 & 20 & 100 \end{array} \right)$$

$$\left( \frac{4}{9} \quad 52/9 \quad 100/9 \right)$$

$$\left( \begin{array}{ccc} 4 & 12 & 36 \\ 4 & 20 & 36 \\ 4 & 20 & 100 \end{array} \right)$$

$$\left( \frac{4}{9} \quad 52/9 \quad 676/9 \right)$$

$$\left( \frac{4}{9} \quad 52/9 \quad 676/9 \right)$$

OK

$$5 \cdot 12 + 64 + 100 = 676$$

2 sol<sup>o</sup>: 4/9 et 4

$$(17) R/r = 3 \text{ mm}$$

Soit  $k$  = fraction de blanc gris

$$S = \frac{6S}{9} + \frac{6S}{81} + \frac{6S}{9^3} + \dots + kS$$

$$S - \frac{S}{9} = \frac{6S}{9} + k(S - \frac{S}{9})$$

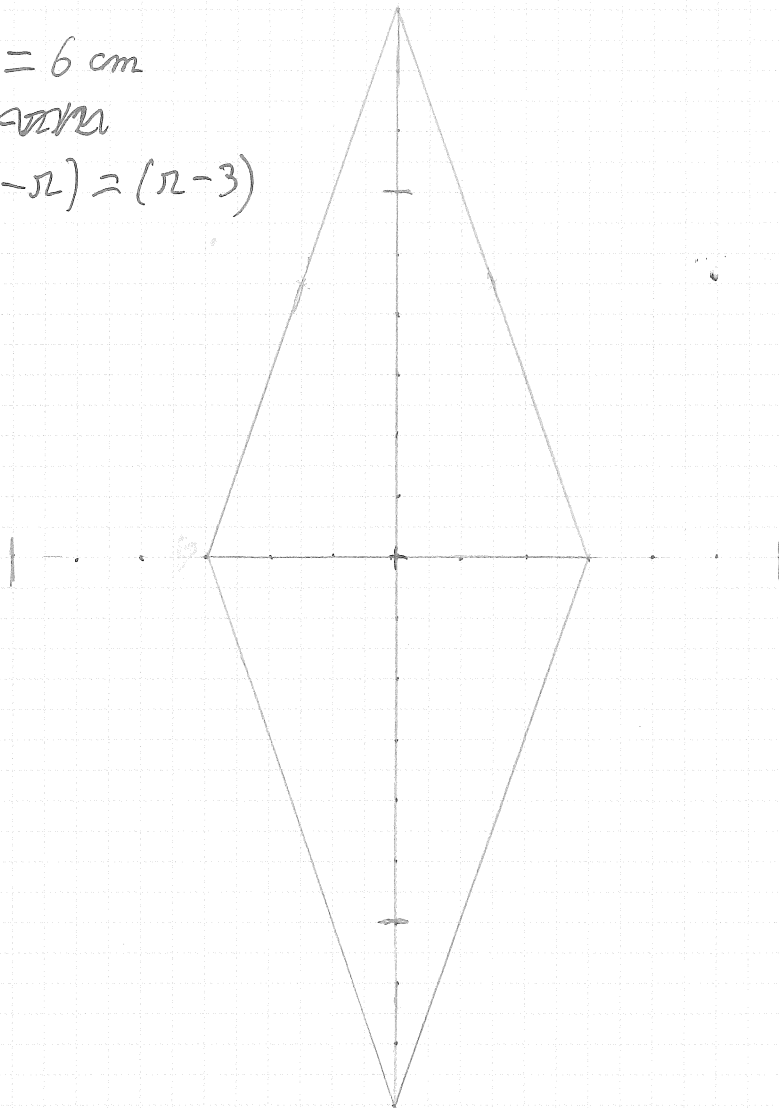
$$\frac{8}{9} = \frac{6}{9} + \frac{8}{9}k \quad \frac{8}{9}k = \frac{2}{9} \quad k = 1/4 = 25\%$$

(18)

$$r = 6 \text{ cm}$$

~~(9-3)r~~

$$(9-r) = (r-3)$$



$$(15) \text{ suite } h=3 \quad l=5 \quad |y-h|=4 \rightarrow y=7$$

$$x = \frac{4}{3} y = \frac{28}{3}$$

$$x \text{ réel} = \frac{28}{3} \times \frac{504}{3} = 28 \times 56 = 1568$$