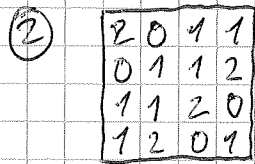
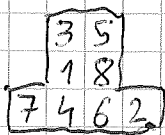


① 751



- ③
- 0: 1
 - 0: 2 . .
 - 1: 2 1 .
 - 2: 2 . 1
 - 3: . 2 1
 - 4: . 1 .
 - 4: . 2 .
 - 5: 1 2 .
 - 6: 1 . 2
 - 7: . 1 2
 - 8: . . 1
 - 8: . . 2

④ $1+2+3+4$ non

$1+2+3+6+8$

⑤ $(12-4) \times 3 = 24$

$(12-3) \times 4 = 36$

$(23-4) \times 1 = 19$

$(13-4) \times 2 = 18 \leftarrow$

⑥ A: $20 \rightarrow 21$

B: $23 \rightarrow 5$

C: $20 \rightarrow 21, 21 \rightarrow 22, 23 \rightarrow 0, 5 \rightarrow 6$

Ptes steimtes: $6 \rightarrow 20, 22 \rightarrow 23$
 $\underbrace{14} + \underbrace{1} = \underline{15}$

⑦ $G_1 G_2 = F_1 + F_2$

$F_1 F_2 = G_1 + G_2$

$ab = c+d$

$cd = a+b$

$a+b \geq c+d$ ~~non~~ $c+d \leq 15$

$ab \leq 15$

$3 \times 5 \rightarrow$ non

$3 \times 4 = 5 + 7$ non

2×7 non

2×6 non

$2 \times 5 = 1 + 9$ non

$2 \times 4 =$ non

$2 \times 3 = 1 + 5$

$1 \times 5 = 2 + 3$

Mathilde: 1 et 5

⑧

	841	113	381	1501	1751	1281	1531			
1	71	87	148	311	189	1051	1571	1821	1351	1601
1061	1311	1831	1091	1611	181	1331	1641	1171	1421	
1131	1381	1901	1161	1681	1931	1461	1711	1241	1491	
1941										
2011										

→ 22

⑨

79
~~156~~
 55 → ~~58~~ $\Delta \leq 54$
 78
 57

→ return > 25 → $\Delta = 54$

A return = 25, 2, 1, 24, 3

⑩

~~p = 58~~ p = 58
 ~~$\Delta = 27$~~ f = 27
~~m = 22~~ m = $\Delta + 22$

$$p + k = 2(f + k) \rightarrow k = p - 2f = 4$$

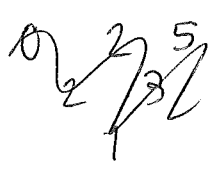
$$m + \Delta + 2k = 100 \rightarrow m + \Delta = 92$$

$$2\Delta = 92 - 22 = 70$$

$$\Delta = \underline{35}$$

⑪

Δ d(3) = 0
 \square d(4) = 2
 \square d(5) = 5



$$d(n) = \frac{n(n-3)}{2}$$

$$\frac{n(n-3)}{2} = 13n \rightarrow n-3 = 26 \rightarrow n = \underline{29}$$

[1h]

$$\textcircled{12} \overline{aba} = k^2$$

100
121 → OK
144
169
196
225
256
289
324

361
400
441
484 → OK
529
576
625
676 → OK
729

784
841
900
961

⇒ 3 sol^o

$\textcircled{13}$

1, x : $1+x+x+x-1+1 = 3x+1 = 88 \rightarrow x=29$ (1, 29)

2, x : $2+x+2x+x-2+2^x = 88$

$4x+2^x = 88 \rightarrow x=6, 24+64=88$ (2, 6)

3, x : $3+x+3x+x-3+3^x = 88$

$5x+3^x$ non

4, x : ~~6A+4A~~ $4^x \rightarrow x=3$

$7+12+1+64=84$

a, 2 : $2+a+2a+a-2+a^2 = 4a+a^2 = 88$ non
 $a(a+4)$

a, 1 : $1+a+a+a-1+a = 88$

$4a = 88 \rightarrow a=22$

(22, 1)

3 sol^o

14) Si A part en vélo: T

$$30t + 4t' = 40 \quad 30t + 4(T-t) = 40$$

U B: 6 km/h sur 30t pdt $\frac{30t}{6} = 5t$

$$30t + 20(T-5t) = 40$$

$$20(T-5t) = 4(T-5) \quad \text{AAB}$$

$$5T - 25t = T - 5 \rightarrow 24t = 4T \rightarrow T = 6t$$

$$\rightarrow 50t = 40 \rightarrow t = \frac{4}{5} \quad T = \frac{24}{5}$$

Si B part en vélo:

$$20t + 6(T-t) = 40 \quad A: 4 \text{ km/h sur } 20t \text{ pdt } \frac{20t}{4} = 5t$$

$$20t + 30(T-5t) = 40$$

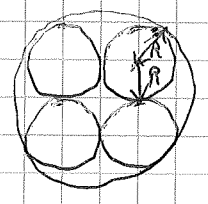
~~$$5T - 25t = T - t \quad T = 6t$$~~

idem

$$T = \frac{24}{5} \text{ h} = 4 \text{ h} + \frac{4}{5} \text{ h} = 4 \text{ h} + 48 \text{ min}$$

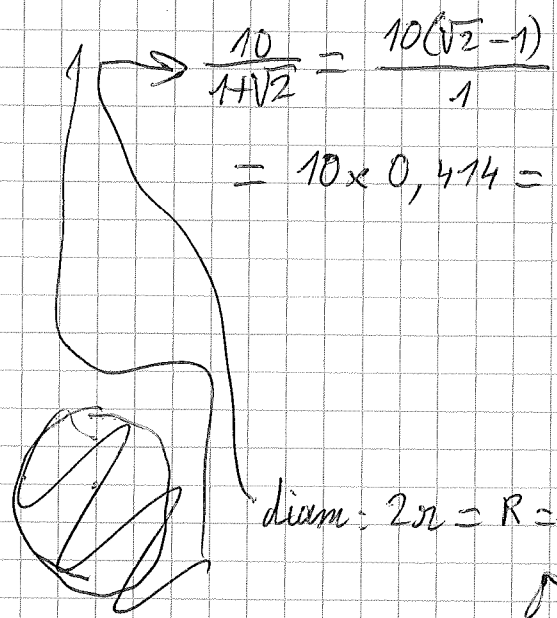
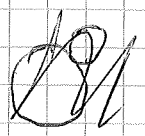
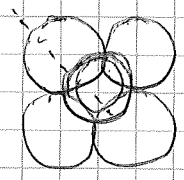
$$\rightarrow \underline{12 \text{ h } 48}$$

15)



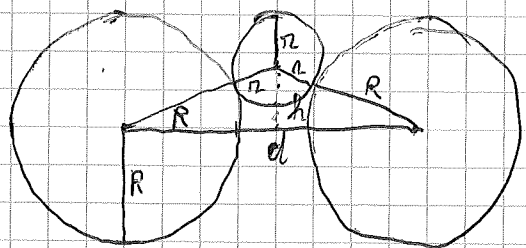
$$2(R + R\sqrt{2}) = 20 \text{ cm}$$

$$R = \frac{10}{1 + \sqrt{2}} \text{ cm}$$



$$\frac{10}{1 + \sqrt{2}} = \frac{10(\sqrt{2} - 1)}{1} = 10 \times 0,414 = \underline{4,14}$$

$$\text{diam} = 2r = R = \frac{10}{1 + \sqrt{2}} \text{ cm}$$



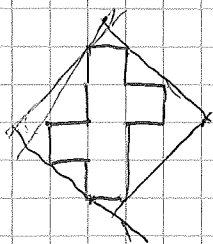
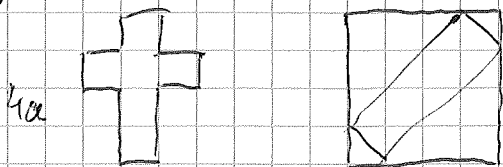
$$d = 2R\sqrt{2}$$

$$(R\sqrt{2})^2 + h^2 = (R+r)^2$$

$$R + h + r = 2R \rightarrow R = h + r$$

$$2R^2 + R^2 + r^2 - 2Rr = R^2 + r^2 + 2Rr \rightarrow 2R = 4r, R = 2r$$

16



$$a \left(\frac{5\sqrt{2}}{2} \right) = 120$$

$$a = \frac{48}{\sqrt{2}} = 24\sqrt{2} = 24 \times 1,414 = 6 \times 5,656 = 33,936 \approx \cancel{33,936} \approx 34 \text{ cm}$$

17

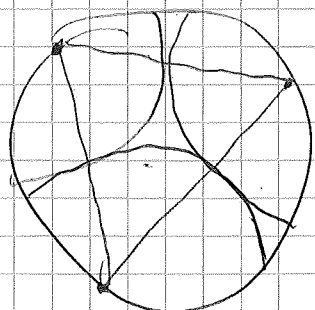
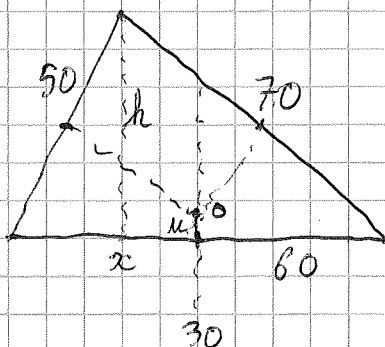


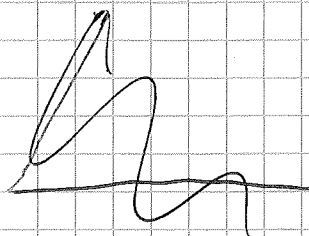
Fig: 50, 60, 70



$$19^2 = \cancel{361} = 361$$

$$1225/5 = 245$$

$$245/5 = 49$$



$$x^2 + h^2 = 50^2$$

$$(60-x)^2 + h^2 = 70^2$$

$$3600 - 120x = 120 \times 20$$

$$30 - x = 20 \quad x = 30 - 20 = 10$$

$$h^2 = 50^2 - 10^2 = 2400 \quad h = 20\sqrt{6}$$

$$R^2 = 30^2 + u^2 = 20^2 + (h-u)^2$$

$$30^2 - 20^2 = h^2 - 2hu$$

$$u = \frac{1900}{40\sqrt{6}} = \frac{95}{2\sqrt{6}}$$

$$R^2 = 30^2 + \frac{190^2}{16 \times 6} = 100 \left(9 + \frac{361}{96} \right) = \frac{100}{96} \times (864 + 361) = \frac{350^2}{6 \times 4^2}$$

$$R = \frac{350}{4\sqrt{6}} \quad D = \frac{350}{2\sqrt{6}} = 350\sqrt{6}/12$$

$$9 \times 96 = 864$$

$$1225 = 35^2$$

17 serito

$$\frac{350\sqrt{6}}{12} = 350 \times 1,414 \times 1,732$$

$$1,414 / 2 = 0,707$$

$$1,732 / 2 = 0,866$$

$$\frac{\sqrt{6}}{4} \approx 0,612262$$

$$11 \quad 1/3 \approx 0,204087$$

$$\begin{array}{r} 204087 \\ \times \quad 35 \\ \hline 1020435 \\ 612261 \\ \hline 7143045 \end{array}$$

$$\begin{array}{r} 866 \\ \times 707 \\ \hline 6062 \\ 6062 \\ \hline 612262 \end{array}$$

→ 71_a

