

⑤

$$20-9-35-12 \begin{cases} 115-20-5-3 \\ 16-24-25-15-36-21-30 \end{cases}$$

⑥

$$P, F. \begin{cases} P = 2F \\ P + F = 100 - 2 \times 11 = 78 \end{cases}$$

$$F = 78 / 3 = \underline{26}$$

$$P = \underline{52}$$

⑦

$$\begin{cases} 1950 = 16b + 18j \\ b = 2j \end{cases}$$

$$j = \frac{1950}{50} = 39$$

$$b = 78$$

$$\begin{array}{r} 39 \\ \times 16 \\ \hline 624 \end{array} \quad \begin{array}{r} 78 \\ \times 18 \\ \hline 1404 \end{array}$$

$$\begin{array}{r} 78 \\ \times 16 \\ \hline 1248 \end{array} \quad \begin{array}{r} 39 \\ \times 18 \\ \hline 702 \end{array}$$

CALCULATORS

⑧

$$t_i = c + p + v_i = v_i + 336$$

1) $c = t_1/3 \rightarrow t_1 = 666, v_1 = 330$

2) $p = t_2/3 \rightarrow t_2 = 342, v_2 = 6$

3) $v_3 = t_3/3 \rightarrow 3v_3 = v_3 + 336 \rightarrow v_3 = 336/2 = 168$

$$v_1 + v_2 + v_3 = \underline{504}$$

⑨

001 $\begin{matrix} \leftarrow 0 \\ \leftarrow 1 \end{matrix}$

~~001000~~
~~001001~~

12537640

~~004000~~

~~004001~~

~~004010~~

001 011

~~0041000~~

~~00410100~~

001110

~~004111~~

0010111000

00101101

00111000

0011101000

13765240



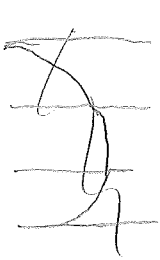
HEWLETT®
PACKARD

CALCULATORS

10

18

~~10~~



(11)

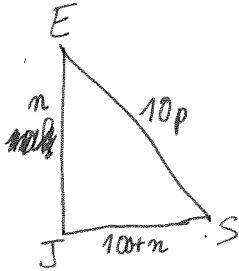
$$\frac{2 \times 8,70}{3} ?$$

3

$$\rightarrow (5,80) ?$$

$$\alpha + (30 - \alpha) \times 2 + \alpha$$

(12)



$$JS = 100 + JE$$

en km

10p min?

$$1) (100+n)^2 = n^2 + (10p)^2$$

$$200n = 100p^2 - 100^2$$

$$2n = p^2 - 100 \rightarrow p = 12, n = 22$$

$$p = \cancel{100} \quad n = \cancel{22} \quad 22, 120, 122 \rightarrow 120 \text{ km}$$

$$2) 100p^2 = n^2 + (100+n)^2$$

$$= 2n^2 + 200n + 100^2 \rightarrow 10|n$$

$$n = 10 \rightarrow 200 + 2000 + 10000 = 12200$$

$$n = 20 \rightarrow \cancel{800} + 400 + 14400$$

$$\begin{array}{r} 122^2 \\ \hline 122 \\ \times 122 \\ \hline 14884 \end{array} \quad \begin{array}{r} 484 \\ 14400 \\ \hline 14884 \end{array}$$

↓
12 km

CALCULATORS

a, e, h, i, k

(13)

$$a+b=e+f \rightarrow 3a+d+g=2e+h$$

$$f=e+h$$

$$c=a+d+g=2a+e+d+i=3a+2e+i$$

$$b=a+c=2a+d+g=3a+e+d+i=4a+2e+i \quad \begin{matrix} l=42 \\ m=33 \end{matrix}$$

$$d=a+e$$

Fin:

| | |
|------|-----------------|
| a=3 | → i=5 |
| e=11 | f=11 |
| b=39 | g=19 |
| c=36 | h=20 |
| d=14 | f=31 |
| j=24 | k=9 |

75 / 112

$$l=m+k=j+2k=g+i+2k=d+2i+2k$$

$$m=j+k=g+i+k=d+2i+k$$

$$j=g+i=d+2i$$

$$g=d+i$$



$$b=4a+2e+i$$

$$c=3a+2e+i$$

$$d=a+e$$

$$f=e+h$$

$$g=a+e+i$$

$$j=a+e+2i$$

$$l=a+e+2i+2k$$

$$m=a+e+2i+k$$

$$h=d+e-i=a+2e-i$$

$$k=i+j-h=a+e+3i-a-2e+i$$

$$\hookrightarrow k=4i-e$$

$$a+b=e+f \rightarrow 5a+2e+i=2e+h$$

$$=a+4e-i$$

$$4a-2e+2i=0$$

$$\rightarrow 2a-e+i=0 \rightarrow e=2a+i$$

$$f+h=l+k \rightarrow 2a+5e-2i=a+e+2i$$

$$+12i-3e$$

$$a+7e-16i=0$$

$$15a-9i=0$$

CALCULATORS

(14)

10 → 9/1 → 8/2 → 7/1/2 → 6/1/3
 → 5/2/3 → 4/1/2/3 → ~~3/1/2/3/4~~ 3/1/2/4
~~2/1/2/3/4~~

3/3/3/1 → 2/2/2/4 → 1/1/1/3/4
 → 2/3/5

2/2/2/2/2 → 1/1/1/1/1/5 → 4/6
 → 3/5/2

3/3/4 → 2/2/3/3 → 1/1/2/2/4 → 1/1/3/5
 → 2/4/4 → 1/3/3/3

1; 2; 3; 4 scale sol^o?

3/3/2/1/1

1/2/2/5 → 1/1/4/4 → 3/3/4 → 2/2/3/3
0 1 2 3

→ 1/1/2/2/4 → 1/1/3/5 → 2/4/4 3 sol

→ 1/3/3/3 → 2/2/2/4 → 1/1/1/3/4 OK
4 5 6 7 8

CALCULATORS

(15)

$$X^2 + (X^2 + 1) = L^2$$

$$L^2 = 2X^2 + 1 \rightarrow L \text{ impair } L = 2n + 1$$

\hookrightarrow P-F

$$2X^2 = (L+1)(L-1) \\ = 2(n+1)2n = 4n(n+1)$$

$$\rightarrow X \text{ pair } X = 2x$$

$$2x^2 = n(n+1) \quad x^2 = \frac{n(n+1)}{2}$$

$$n=1, x=1 \rightarrow 2 \text{ et } 3$$

$$n=8, x=6 \rightarrow 12 \text{ et } 17$$

- 1
- 3
- 6
- 10
- 15
- 21
- 28
- 36
- 45
- 55
- 66
- 78
- 91
- 105

$$\frac{24 \times 25}{2}$$

$$\frac{49 \times 50}{2}$$

$$\rightarrow n=49, x=35$$

$$\rightarrow 70 \text{ et } 99$$

- (0, 1)
- (2, 3)
- (12, 17)
- (70, 99)

$$70 = 2 \times 17 + 3 \times 12$$

$$99 = 3 \times 17 + 4 \times 12$$

$$\begin{pmatrix} 70 \\ 99 \end{pmatrix} = \begin{pmatrix} 3 & 2 \\ 4 & 3 \end{pmatrix} \begin{pmatrix} 12 \\ 17 \end{pmatrix}$$

$$\begin{pmatrix} 3 & 2 \\ 4 & 3 \end{pmatrix} \begin{pmatrix} 70 \\ 99 \end{pmatrix} = \begin{pmatrix} 408 \\ 577 \end{pmatrix}$$

$$210 + 138 \\ 280 + 297$$

$$P = 2X + L + 1$$

$$= 2 \times 408 + 578 \\ = 816 + 578$$

$$= \underline{1394}$$

$$\begin{array}{r} 408 \\ \times 408 \\ \hline 166464 \\ 332928 \\ \hline \end{array}$$

$$\begin{array}{r} 577 \\ \times 577 \\ \hline 332928 \\ \hline \end{array}$$

$$\begin{array}{r} 70 \\ \times 99 \\ \hline 6300 \\ 6300 \\ \hline 6930 \end{array}$$

$$P = 2X + L + 1 \\ = \underline{1394}$$

CALCULATORS

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| | | | | | | | |
|---|----|----|----|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2 | 1 | 4 | 3 | 6 | 5 | 8 | 7 |
| 3 | 4 | 1 | 2 | 7 | 8 | 5 | 6 |
| 4 | 3 | 2 | 1 | 8 | 7 | 6 | 5 |
| 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 |
| 6 | 5 | 8 | 7 | 2 | 1 | 4 | 3 |
| 7 | 8 | 5 | 6 | 3 | 4 | 1 | 2 |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 9 | 10 | 11 | 12 | | | | |

0
1
2
3

| | | |
|-----|-----|-----|
| 000 | 001 | 010 |
| 001 | 000 | 011 |
| 010 | 011 | 000 |
| 011 | 010 | 001 |
| 100 | 101 | 110 |
| 101 | 100 | 111 |
| 110 | 111 | 100 |
| 111 | 110 | 101 |

| | | | | | | | |
|-----------|----|----|----|---|---|---|---|
| 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
| 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| <hr/> | | | | | | | |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| <hr/> | | | | | | | |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| <hr/> | | | | | | | |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| <hr/> | | | | | | | |
| 99 et 199 | | | | | | | |

$$((2x-1) \text{ XOR } (2y-1)) + 1$$

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