

AREA: HISTORIA DE LA MATEMÁTICA
 TEMA: INDUCCIÓN DEDUCCIÓN

CAJO PARTICULAR
 A
 GENERAL

01 CALCULAR

$$R = \frac{24}{13} + \frac{24}{13} + \dots + \frac{24}{13}$$

$$R = \frac{24}{13} = 24$$

$$R_1 = \left(\frac{2}{3} \right) + \frac{22}{33} + \dots + \frac{22}{33}$$

$$R_1 = \frac{2}{3} (21)^7 = 14$$

SOLUCIÓN PRÁCTICA

01 Σ CIFRA

$$M = \sqrt{444 \dots 444 - 88 \dots 88}$$

$$1^{\text{a}} \text{ CIFRA } \sqrt{44 - 8} = 6 = 6$$

$$2^{\text{a}} \text{ CIFRA } \sqrt{4444 - 88} = 9350 = 66$$

$$3^{\text{a}} \text{ CIFRA } \sqrt{444444 - 888} = 666$$

$$100 \text{ CIFRA } \sqrt{444 \dots 44 - 88 \dots 88} = 666 \dots 666$$

$$RSTA: 600$$

$$N^{\circ} \text{ APRETEÑE} = \frac{n(n-1)}{2}$$

$$N: N^{\circ} \text{ PERSONAL} = 1000$$

$$N^{\circ} \text{ APRETEÑE} = 1000(999)$$

$$N^{\circ} \text{ APRETEÑE} = 999500$$

03

$$F = \frac{11 \dots 11 + 22 \dots 22 + 33 \dots 33}{50 \text{ CIF. } 50 \text{ CIF. } 50 \text{ CIF.}}$$

$$1^{\text{a}} \text{ CIFRA: } (1+2+3)^2 = 36 = 9 \cdot 4$$

$$2^{\text{a}} \text{ CIFRA: } (11+22+33)^2 = 4356 = 18 \cdot 9 \cdot 2$$

$$3^{\text{a}} \text{ CIFRA: } (111+222+333)^2 = 27 \cdot 9 \cdot 3$$

$$50 \text{ CIFRA: } (11 \dots 11 + 22 \dots 22 + 33 \dots 33)^2 = 950$$

$$\Rightarrow 950$$

06

$$F1 \rightarrow \frac{3}{1.2} = 1$$

$$F2 \rightarrow \frac{5}{1.3} + \frac{8}{3.5} = 2$$

$$F3 \rightarrow \frac{7}{1.3} + \frac{7}{3.5} + \frac{7}{5.7} = 3$$

$$F2006 \rightarrow \dots = 2006$$

$$\frac{5}{3} + \frac{1}{3} = \frac{6}{3}$$

$$\frac{7}{3} + \frac{7}{15} + \frac{1}{5} = \frac{35+7+3}{15} = \frac{45}{15} = 3$$

02) $N^{\circ} \text{APRETENE} = \frac{n(n-1)}{2}$

$N^{\circ} \text{PERSONA} = 1000$

$N^{\circ} \text{APRETENE} = \frac{1000 \cdot 999}{2}$

$N^{\circ} \text{APRETENE} = 499500$

03)

$\sum = (11 + 22 + 33 + 44 + 55 + 66 + 77 + 88 + 99)$

1^o CIFRA: $(1+2+3)^2 = 36 = 9 = 9.1$

2^o CIFRA: $(11+22+33)^2 = 4356 = 18 = 9.2$

3^o CIFRA: $(111+222+333)^2 = 27 = 9.3$

666...666
100 CIFRA

50 CIFRA: $(11...11 + 22...22 + 33...33)^2 = 9.50$

$\Rightarrow 450$

06

F1 $\rightarrow \frac{3}{1.3} = 1$

F2 $\rightarrow \frac{5}{1.3} + \frac{5}{3.5} = 2$

F3 $\rightarrow \frac{7}{1.3} + \frac{7}{3.5} + \frac{7}{5.7} = 3$

F2006 $\rightarrow \dots = 2006$

08

PAICAL

E	S	T	4	D
S	T	4	D	15
T	4	D	15	0
4	D	15	0	5
D	15	0	5	0

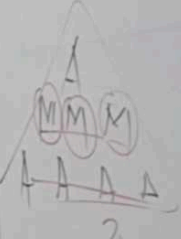
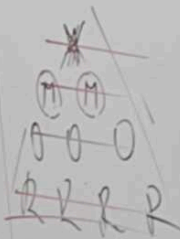
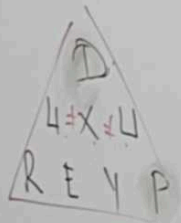
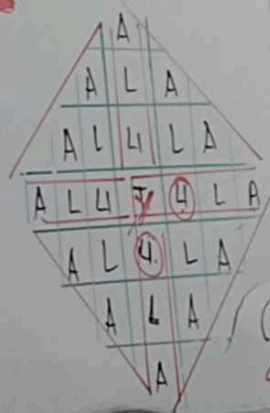
09

HALLAZ: $X+Y-Z$

$212 + 222 + \dots + 282 = XYZ$

$XYZ = 278$

10



$2=8$

19) HALLAR: $X+Y+Z$

$$212 + 222 + \dots + 282 = XYZ4$$

$$\begin{array}{r} 212 \\ 222 \\ 232 \\ \vdots \\ 282 \end{array}$$

$$\begin{array}{r} XYZ4 \\ 278 \end{array}$$

$$\Rightarrow 2+7+8=1$$

$$\begin{array}{r} 2(8) = \dots 4 \\ 3 \quad 24 \\ 21 \dots 8 = 89 \\ 2 \\ = 30 \end{array}$$

RECORDAR: Volver a Viver

PROGRESIÓN ARITMÉTICA (P.A.)

$$a_1, a_2, a_3, \dots, a_n$$

$$a_n = a_1 + (n-1)d$$

$$S_n = \frac{(a_1 + a_n)n}{2}$$

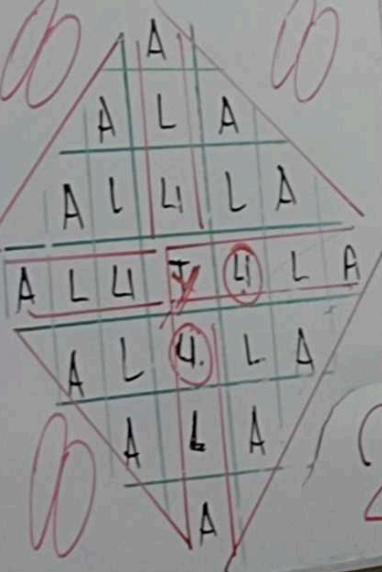
PROGRESIÓN GEOMÉTRICA (P.G.)

$$a_1, a_2, a_3, a_4, \dots, a_n$$

$$a_n = a_1 \cdot q^{n-1}$$

$$S_n = a_1 \frac{q^n - 1}{q - 1}$$

$$2=8$$



16) CALCULAR: $1+6+18+54+162+\dots$

$$1 + 3 + 9 + 27 + 81 + \dots$$

$\times 3 \quad \times 3 \quad \times 3 \quad \times 3 \quad \times 3$

$$1 + \frac{3-1}{3-1}$$

14) CALCULAR: $4.2^2 + 8.3^2 + 16.4^2 + \dots$

$$1.2 + 2.3 + 3.4 + \dots$$

$$4, 18, 48, 94$$

$14, 30, 46$

$16, 16$

$$S_n = 4C_0 + 16C_1 + 16C_2$$

$$\frac{3}{1 \times 3} = 1$$

$$\frac{5}{1 \times 3} + \frac{5}{3 \times 5} = 2$$

$$\frac{7}{1 \times 3} + \frac{7}{3 \times 5} + \frac{7}{5 \times 7} = 3$$

$$006 = \dots = 1006$$

8) PAJAL

E	S	T	4	0
S	T	4	0	15
T	4	0	15	0
4	0	15	0	5
0	15	0	5	0