



MATHEMATICAL REASONING

Chapter 19, 20 & 21

2nd
OF SECONDARY

FEED BACK



 **SACO OLIVEROS**

Mario pesa 72 kg más la séptima parte de su peso total. ¿Cuál es la cuarta parte del peso de Mario?

Resolución:

Peso de Mario



7n
84 kg



$$\text{Peso} = 72 + \frac{1}{7} (\text{Peso})$$

$$7n = 72 + \frac{1}{7} (7n)$$

$$7n = 72 + n$$

$$6n = 72$$

$$n = 12$$



Piden:

$$\frac{1}{4} (\text{Peso})$$

$$\frac{1}{4} (84\text{kg}) \rightarrow 21\text{kg}$$



Rpta.

21 Kg



Si $\textcircled{x} = x^2 + 1$, calcule $\textcircled{5} \times \textcircled{6}$

Resolución:

$$\textcircled{5} = (5)^2 + 1 = 26$$

$$\textcircled{6} = (6)^2 + 1 = 37$$

Finalmente :

$$\textcircled{5} \times \textcircled{6} = 962$$



962

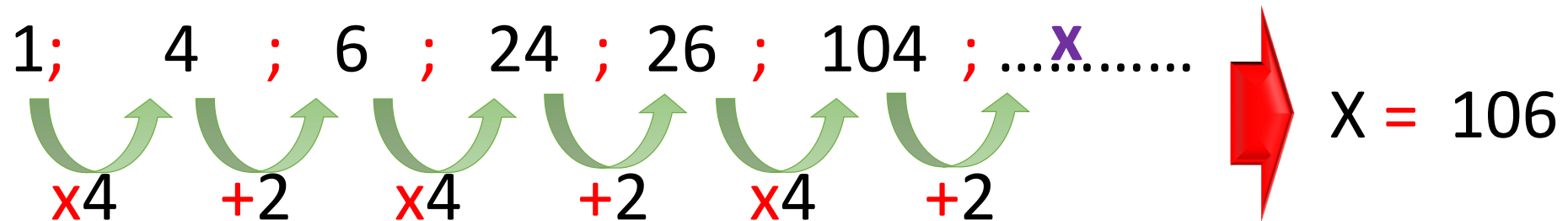
3



Halle el valor de x.

1; 4; 6; 24; 26; 104; x

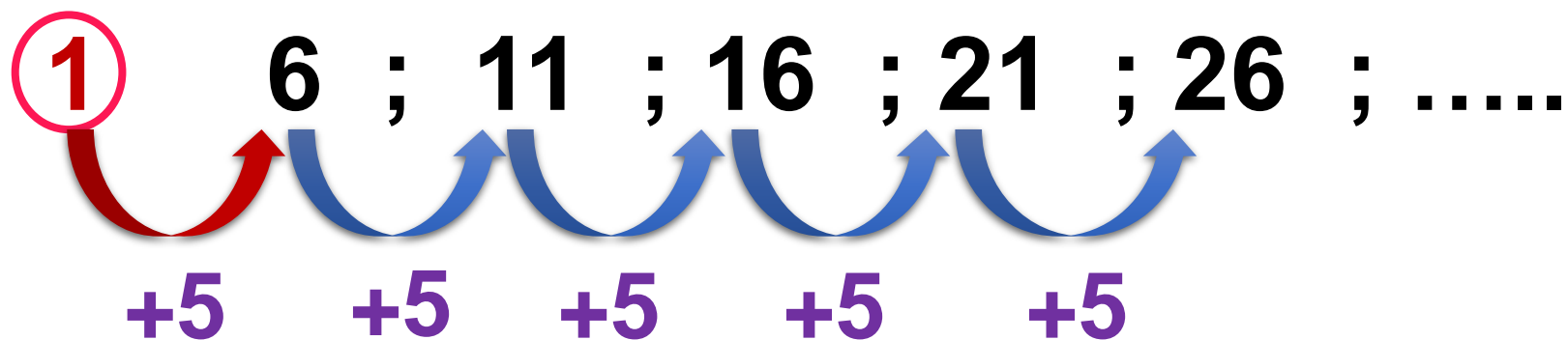
Resolución:



106

Determine el término general en: 6 ; 11; 16; 21; 26;

Resolución:

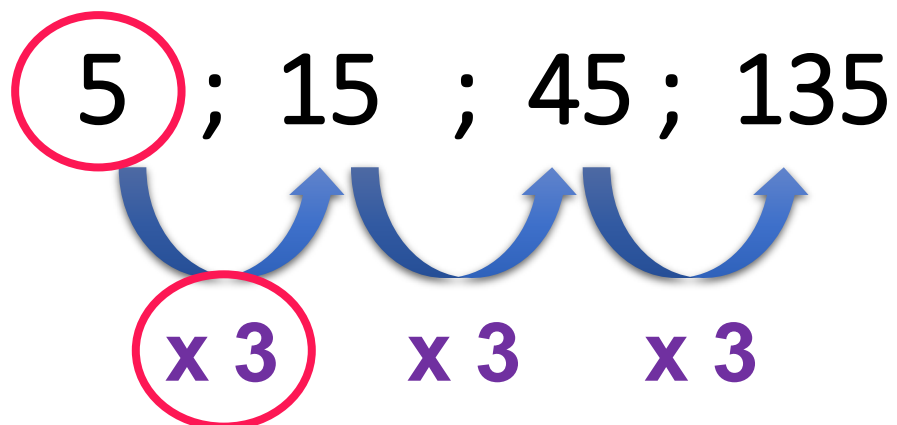


$$t_n = 5n + 1$$



Halle el término de lugar 20 de la sucesión: **5 ; 15 ; 45; 135;...**

Resolución:



El término enésimo será:

$$t_n = 5 \cdot 3^{n-1}$$

Luego, el término de lugar 20 será:

$$t_{20} = 5 \cdot 3^{20-1}$$

$$t_{20} = 5 \cdot 3^{19}$$



$$5 \cdot 3^{19}$$

6



¿Qué número falta?

Resolución:

$$7 \quad 5 \quad 53 \quad \rightarrow \quad 7 \times 5 = 35 \quad \rightarrow \quad 53$$

$$9 \quad 3 \quad 72 \quad \rightarrow \quad 9 \times 3 = 27 \quad \rightarrow \quad 72$$

$$8 \quad 7 \quad 65 \quad \rightarrow \quad 8 \times 7 = 56 \quad \rightarrow \quad 65$$

$$6 \quad 7 \quad X \quad \rightarrow \quad 6 \times 7 = 42 \quad \rightarrow \quad 24$$



24



Halle el valor de X en:

$$\boxed{31} \boxed{24} \boxed{24}$$

$$\boxed{51} \boxed{30} \boxed{23}$$

$$\boxed{82} \boxed{X} \boxed{43}$$

$$\boxed{65} \boxed{44} \boxed{31}$$

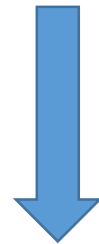
Resolución:

$$\boxed{31} \boxed{24} \boxed{24}$$



$$(3+1)(2+4)=24$$

$$\boxed{51} \boxed{30} \boxed{23}$$



$$(5+1)(2+3)=30$$

$$\boxed{82} \boxed{X} \boxed{43}$$



$$(8+2)(4+3) = X$$



$$X = 70$$

$$\boxed{65} \boxed{44} \boxed{31}$$



$$(6+5)(3+1)=44$$



70



Calcule la suma total: $S = 6 + 14 + 22 + 30 + \dots + 318$

Resolución:

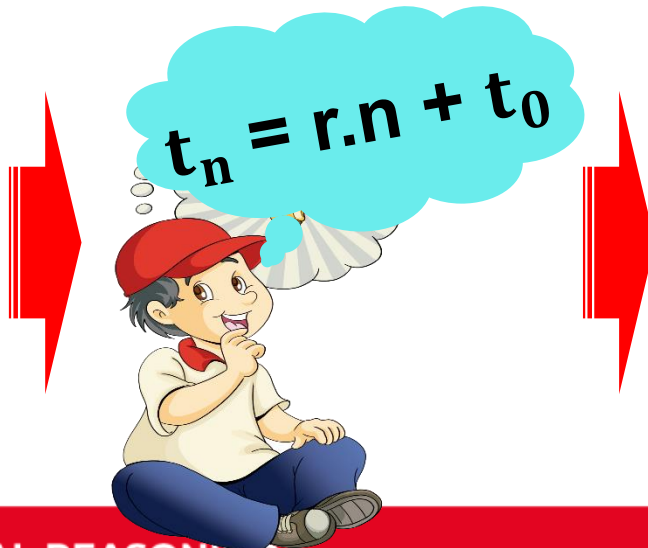
Veamos:

$$t_0 = -2 + 6 + 14 + 22 + 30 + \dots + 318$$

$$t_1 : 6$$

$$t_n : 318$$

$$n : ?$$



$$318 = 8n - 2$$

$$320 = 8n$$

$$40 = n$$

$$S = \frac{(t_1 + t_n)}{2} \times n$$

$$S = \frac{(6 + 318)}{2} \times 40$$

$$S = 162 \times 40$$

$$S = 6\,480$$



6 480

Efectúe: $M = 1 + 3 + 5 + 7 + 9 + \dots + 203$

Resolución:

Veamos:

$$t_0 = -1 + 1 + 3 + 5 + 7 + \dots + 203$$

$+2 \quad +2 \quad +2 \quad +2 = r$

$$t_1 : 1$$

$$t_n : 203$$

$$n : ?$$

$$t_n = r \cdot n + t_0$$



$$203 = 2n - 1$$

$$204 = 2n$$

$$102 = n$$

$$S = \frac{(t_1 + t_n)}{2} \times n$$

$$S = \frac{(1 + 203)}{2} \times 102$$

$$S = 102 \times 102$$

$$S = 10\,404$$



10 404



Halla el último término de la serie de razón constante:

$$\underbrace{9 + \dots + \beta}_{20 \text{ términos}} = 1890$$

Resolución:

$$S = \frac{(t_1 + t_n)}{2} \times n$$

$$t_n = \beta$$

$$1890 = \frac{(9 + \beta)}{2} \times 20$$



$$189 = 9 + \beta$$

$$180 = \beta$$



180