

# REPASO

36  $\sqrt{x} \rightarrow \sqrt{5}$

$$\log_5 x + \log_5 5 = 2$$

$$1 + 1$$

$$x=5 \Rightarrow 2$$

$$\log_5 x + \frac{1}{\log_5 x} = 2$$

$$a + \frac{1}{a} = 2 \quad (a-1)^2 = 0$$

$$a^2 + 1 = 2a$$

$$a^2 - 2a + 1 = 0$$

$$a=1$$

$$\log_5 x = 1$$

$$x=5 \rightarrow (5)$$

37

Nº de cifras:

37

$$E = 2^{28} \cdot 3^{29} \cdot 5^{20}$$

$$\log 2 = 0,3010$$

$$\log 3 = 0,4771$$

$$\log E = \log (2^{28} \cdot 3^{29} \cdot 5^{20})$$

$$\log E = \log (2^{20} \cdot 2^8 \cdot 3^{29} \cdot 5^{20})$$

$$\log E = \log (10^{20} \cdot 2^8 \cdot 3^{29})$$

$$E = 10^{369} \log 10^{20} + \log 2^8 + \log 3^{29}$$

$$\log E = 20 + 8(0,3) + 29(0,5)$$

$$\log_{10} E = 30,9$$

34 "X"

$$2 \left( \log_a x \right) + 5 \left( x^{\log_a 7} \right) = 343$$

$$2 \left( x^{\log_a 7} \right) + 5 \left( x^{\log_a 7} \right)$$

$$7 \cdot x^{\log_a 7} = 49$$

$$x^{\log_a 7} = 7^2$$

$$\log_a x = 2$$

$$x = a^2$$

10 Si:  $P(x) = ax + b$

$P[P[P(x)]] = 8x - 7$

$a^3x + a^2b + ab + b = 8x - 7$

$a = 2 \begin{cases} 4b + 2b + b = -7 \\ 7b = -7 \end{cases}$

$b = -1$

so  $P(x) = 2x - 1$  ✗

18  $T_{21} \quad 1 - \sqrt{x-1}$  40

$2x - x^2 = -(x^2 - 2x + 1 - 1)$

$1 - \sqrt{x-1} = -[x-1]^2 - 1$   
 $1 - (x-1)^2$

$T_K = (\text{base}_1)^{N \cdot T - K} (\text{base}_2)^{K-1}$

$T_{21} = \left( \begin{matrix} 1 \\ 1 \end{matrix} \right)^{N \cdot T - 21} \cdot \left( \begin{matrix} 2 \\ \sqrt{x-1} \end{matrix} \right)^{21-1}$

$\frac{x-1}{1}$

28

$\sqrt{2x+7} + 2\sqrt{x^2+7x+10} - \sqrt{2x+1} + 2\sqrt{x^2+x-2}$   
 $\begin{matrix} x & 5 \\ x & 2 \end{matrix} \quad \begin{matrix} x & +2 \\ x & -1 \end{matrix}$   
 $(x+5)(x+2)$

$\sqrt{x+5} + \sqrt{x+2} - (\sqrt{x+2} + \sqrt{x-1})$

$\sqrt{x+5} - \sqrt{x-1}$  ✗

$$(15) \quad \frac{x^{6n-3} - x^{6n-6} + x^{6n-9} - \dots + x^9 - x^6 + x^3 - 1}{x^{3n-3} - x^{3n-6} + x^{3n-9} - \dots - x^9 + x^6 - x^3 + 1}$$

$$\begin{array}{r} \text{---} \text{---} \text{---} \\ \text{---} \text{---} \text{---} \\ \text{---} \text{---} \text{---} \\ \text{---} \text{---} \text{---} \end{array} \begin{array}{l} (6n) \\ x - 1 \\ x^3 + 1 \\ x^{3n} + 1 \\ x^3 + 1 \end{array} \Rightarrow \frac{(x^{3n} + 1)(x^3 - 1)}{(x^3 + 1)(x - 1)}$$

$$(24) \text{ MCM: } P(x,y) = \frac{x^2 - y^2}{(x+y)(x-y)}$$

$$F(x,y) = \frac{x^2 - 2xy + y^2}{(x-y)^2}$$

$$S(x,y) = \frac{x^2 + 2xy + y^2}{(x+y)^2}$$

$$\text{MCM} \quad (x+y)^2 (x-y)^2 \Rightarrow (x^2 - y^2)^2$$

$$(12) \text{ Si: } X = \sqrt[3]{12+1} - \sqrt[3]{12-1}$$

$$\text{Hallar: } \frac{x^3 + 3x + 8}{2} \quad X^3 = (a-b)^3$$

$$x^3 = a^3 - b^3 - 3ab(a-b)$$

$$X^3 = \sqrt[3]{2+1} - \sqrt[3]{2-1} - 3\sqrt[3]{2+1}\sqrt[3]{2-1}$$

$$X^3 = 2 - 3X$$

$$X^3 + 3X = 2$$

$$\sqrt[3]{12+1} - \sqrt[3]{12-1} \Rightarrow 10$$

$$(32) \quad \frac{1}{a}x^2 + \frac{8}{b}x + \frac{2}{c}$$

$$\sqrt{x^b} \cdot \sqrt{x^p} = \sqrt{x^b \cdot x^p} = \sqrt{x^{b+p}}$$



$$y^2(x-y)$$

$$2xy+y^2$$

$$xy+y^2$$

$$(x^2-y^2)^2$$

12 Si:

$$x = \sqrt[3]{12+1}$$

Kallar:  $x^3+3x+8$

$$x^3 = (a-b)^3$$

$$x^3 = a^3 - b^3 - 3ab(a-b)$$

$$x^3 = \sqrt[3]{2+1} - (\sqrt[3]{2-1}) - 3\sqrt[3]{2-1}(x)$$

$$x^3 = 2 - 3x$$

$$x^3 + 3x = 2$$

$$\sqrt[3]{12-1}$$

$$\Rightarrow 10$$

32

$$x^2 + 8x + 20 > 0$$

$$b^2 - 4ac$$

$$8^2 - 4(1)(20)$$

$$64 - 80$$

$$(-16) < 0$$

$$(S = \mathbb{R})$$

$$\sqrt[a]{x^b} \cdot \sqrt[c]{x^p}$$

$$\sqrt[a]{x^b} \cdot \sqrt[ac]{x^p}$$

3

$$L = \sqrt[3]{x^{4020}} \sqrt[4]{x^{4030}} \sqrt[6]{x^{4040}}$$

$$\sqrt[3]{x^{4017}} \sqrt[12]{x^{4030}} \sqrt[72]{x^{4040}}$$

$$\sqrt[3]{x^{4017}} \sqrt[12]{x^{4030}} \sqrt[72]{x^{4040}}$$

$$x \cdot x^2 \cdot x^3$$

$$x^6$$

4

$$\sqrt[2]{132+132+...}$$

$$\frac{12}{6}$$

$$\text{Rec}(\frac{2}{1})$$

$$(\frac{1}{2})^3$$

$$\frac{1}{8}$$

$$x^2 + x + 1 \geq 0$$

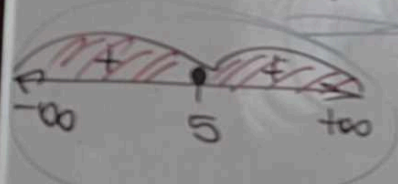
$$x^2 + x + 1 < 0$$

$\emptyset$

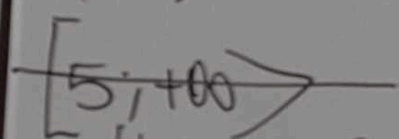
$\mathbb{R}$

$\emptyset$

$\mathbb{R}$



$$(x-5)^2 \geq 0$$



$\mathbb{R}$

$$(x-7)^2 > 0$$

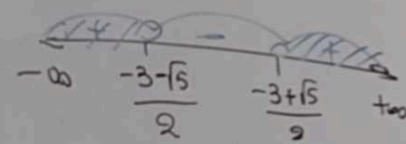
$\mathbb{R} - \{7\}$

$$x^2 + 3x + 1 > 0$$

$$\Delta = 5$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{-3 \pm \sqrt{5}}{2}$$

$$\begin{matrix} \frac{-3 + \sqrt{5}}{2} \\ \frac{-3 - \sqrt{5}}{2} \end{matrix}$$



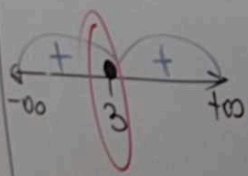
$$(x-3)^2 \leq 0$$

$$a) \emptyset$$

$$b) \mathbb{R}$$

$$c) [3; +\infty)$$

$$(x-3)^2 < 0$$



$$x-3=0$$

$$x=3$$

$$K = \frac{5}{2}$$