



# ALGEBRA

## Chapter 16

**1st**  
SECONDARY

**RETROALIMENTACION**  
**TOMO 2**



 **SACO OLIVEROS**

PROBLEMA 1**Calcule**

$$A = 4^3 + (-5)^2 - 1^{200} + 6^2$$

**Resolución**

$$A = 64 + 25 - 1 + 36$$

$$A = 89 + 35$$

**Rpta**

$$A = 124$$





## PROBLEMA 2

Efectúe  $R = \left(\frac{1}{4}\right)^{-1} + \left(\frac{1}{7}\right)^{-2} + (-3)^4$

**Resolución**

$$R = (4)^1 + (7)^2 + (+81)$$

$$R = 4 + 49 + 81$$

**Rpta**

$$R = 134$$





## PROBLEMA 3

Calcule  $M = -(-1)^{182} + (-5)^3 - (-10)^2$

Resolución

**RECUERDA:**

$$\begin{aligned} (\text{Base Negativa})^{\text{Par}} &= + \\ (\text{Base Negativa})^{\text{impar}} &= - \end{aligned}$$

$$M = -(+1) + (-125) - (+100)$$

$$M = -1 - 125 - 100$$

Rpta

$$M = -226$$





## PROBLEMA 4

Reduce  $B = \frac{3^{a+4}}{3^a} + \frac{5^{a+4}}{5^{a+3}} + \frac{7^{a-1}}{7^{a-1}}$

### Resolución

$$B = 3^{a+4-(a)} + 5^{a+4-(a+3)} + 7^{a-1-(a-1)}$$

$$B = 3^{\cancel{a}+4-\cancel{a}} + 5^{\cancel{a}+4-\cancel{a}-3} + 7^{\cancel{a}-1-\cancel{a}+1}$$

$$B = 3^4 + 5^1 + 7^0$$

$$B = 81 + 5 + 1$$

$$B = 87$$





## PROBLEMA 5

Calcule

$$R = 3^{1-4x} \cdot 9^{2-x} \cdot 27^{2x-1}$$

Resolución

$$R = 3^{1-4x} \cdot (3^2)^{2-x} \cdot (3^3)^{2x-1}$$

$$R = 3^{1-4x} \cdot 3^{4-2x} \cdot 3^{6x-3}$$

$$R = 3^{1-4x+4-2x+6x-3}$$

$$R = 3^2 \rightarrow R = 9$$



## PROBLEMA 6



María Fernanda dice el valor de  $J = \frac{3^{x+2} + 3^x - 3^{x+1}}{7 \cdot 3^x}$  es 2 y Ricardo Lucio dice el valor de  $J$  es 1. ¿Quién dijo la respuesta correcta?

## Resolución

$$J = \frac{3^{x+2} + 3^x - 3^{x+1}}{7 \cdot 3^x} = \frac{3^x \cdot 3^2 + 3^x \cdot 1 - 3^x \cdot 3^1}{7 \cdot 3^x}$$

$$J = \frac{3^x \cdot (3^2 + 1 - 3)}{7 \cdot 3^x} = \frac{\cancel{3^x} \cdot (7)}{7 \cdot \cancel{3^x}}$$



$$J = 1$$



**Ricardo Lucio**



**PROBLEMA 7**

Simplifique

$$S = 16^{4^{-1}} + 125^{3^{-1}} - 4^{2^{-1}}$$

Resolución

$$S = 16^{\frac{1}{4}} + 125^{\frac{1}{3}} - 4^{\frac{1}{2}}$$

$$S = \sqrt[4]{16} + \sqrt[3]{125} - \sqrt{4}$$

$$S = 5$$





Simplifique

$$M = \sqrt[3]{64x^{21}} + \sqrt{16x^{14}} - \sqrt[4]{16x^{28}}$$

Resolución

$$M = \sqrt[3]{64} \cdot \sqrt[3]{x^{21}} + \sqrt{16} \cdot \sqrt{x^{14}} - \sqrt[4]{16} \cdot \sqrt[4]{x^{28}}$$

$$M = 4x^7 + 4x^7 - 2x^7$$

$$M = 6x^7$$

PROBLEMA 9

Calcula el exponente final de x en

$$A = \sqrt[2]{x \cdot \sqrt[5]{x \cdot \sqrt[3]{x^4}}}^1 ; x \neq 0$$

Resolución

Multiplicación  
de índices

$$A = \sqrt[16]{x^{53}}$$

$$\begin{array}{c} 5 \\ \text{por} \end{array} \begin{array}{c} \searrow \\ 2 \end{array} \begin{array}{c} 3 \\ \nearrow \\ \text{más} \end{array} \begin{array}{c} 1 \\ \text{por} \end{array} \begin{array}{c} \searrow \\ 4 \end{array} \begin{array}{c} 1 \\ \nearrow \\ \text{más} \end{array} = 53$$

$$A = x^{\frac{53}{16}}$$

PROBLEMA 10

Reduzca  $A = \sqrt{2 \cdot \sqrt[15]{3}^{15} + \sqrt[6]{2}^{18} - 10} + 1$

Resolución

$$A = \sqrt{2 \cdot (3) + 2^3 - 10} + 1$$

$$A = \sqrt{6 + 8 - 10} + 1$$

$$A = \sqrt{4} + 1 \quad \text{Luego } A = 2 + 1$$

$$A = 3$$