



PRODUCTOS NOTABLES

Son aquellos productos que al presentar cierta forma particular, evita que se efectué la operación de multiplicación escribiendo directamente el resultado.

I. CUADRADO DE UN BINOMIO

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

Ejemplos:

$$\begin{aligned} 1. \quad (x+5)^2 &= (x)^2 + 2(x)(5) + (5)^2 \\ &= x^2 + 10x + 25 \end{aligned}$$

$$\begin{aligned} 2. \quad (y-3)^2 &= (y)^2 - 2(y)(3) + (3)^2 \\ &= y^2 - 6y + 9 \end{aligned}$$

$$\begin{aligned} 3. \quad (Z^3+3)^2 &= (Z^3)^2 + 2(Z^3)(3) + (3)^2 \\ &= Z^6 + 6Z^3 + 9 \end{aligned}$$

$$\begin{aligned} 4. \quad (2a-3b)^2 &= (2a)^2 - 2(2a)(3b) + (3b)^2 \\ &= 4a^2 - 12ab + 9b^2 \end{aligned}$$

$$\begin{aligned} 5. \quad (2a^3-5y)^2 &= (2a^3)^2 - 2(2a^3)(5y) + (5y)^2 \\ &= 4a^6 - 20a^3y + 25y^2 \end{aligned}$$

PRACTIQUEMOS

Efectuar :

$$1. \quad (x+1)^2 =$$

2. $(m - 8)^2 =$

3. $(x^4 + 3)^2 =$

4. $(4x + y)^2 =$

5. $(2a - b)^2 =$

6. $(3a^3 + 8b)^2 =$

7. $(x^7 - 6)^2 =$

8. $(2a + 6b)^2 =$

9. $(2a^3 + 4b^4)^2 =$

10. $(x^4 - 3y^3)^2 =$

PRACTIQUEMOS EN CASA

Resolver :

1. $(3x + 8b)^2$

2. $(7x + 11)^2$

3. $(a^2 + 10b)^2$

4. $(m + n)^2$

5. $(y + 4)^2$

6. $(6 + a)^2$

7. $(2a - b^2)^2$

8. $(10m^3 - 8y^5)^2$

9. $(x - 3)^2$

10. $(m^3 - 4)^2$

II. CUBO DE UN BINOMIO

$$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$

$$(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$$

Ejemplos :

1.
$$(y + 3)^3 = (y)^3 + 3(y)^2(3) + 3(y)(3)^2 + (3)^3$$

$$= y^3 + 9y^2 + 27y + 27$$

2.
$$(m - 4)^3 = (m)^3 - 3(m)^2(4) + 3(m)(4)^2 - (4)^3$$

$$= m^3 - 12m^2 + 48m - 64$$

$$\begin{aligned}
 (4x-2y)^3 &= (4x)^2 - 3(4x)^2(2y) + 3(4x)(2y)^2 - (2y)^3 \\
 3. \quad &= 16x^2 - 96x^2y + 48xy^2 - 8y^3
 \end{aligned}$$

$$\begin{aligned}
 (x^3+2b)^3 &= (x^3)^2 + 3(x^3)^2(2b) + 3(x^3)(2b)^2 + (2b)^3 \\
 4. \quad &= x^6 + 6x^6b + 12x^3b^2 + 8b^3
 \end{aligned}$$

PRACTIQUEMOS

Efectuar :

1. $(4x + 5)^3 =$
2. $(a + 3)^3 =$
3. $(2m + 3n)^3 =$
4. $(a^2 - 2b)^3 =$
5. $(2a + x)^3 =$
6. $(1 + x)^3 =$
7. $(a^2 + 8)^3 =$
8. $(a^2 + 2b)^3 =$
9. $(1 - b^2)^3 =$
10. $(1 - 3m)^3 =$

PRACTIQUEMOS EN CASA

Resolver :

- | | | | |
|-----------------|------------------|-----------------|----|
| 1. $(x - 1)^3$ | 2. $(x - 2)^3$ | 3. $(4a + 5)^3$ | 4. |
| $(m^2 - 3n)^3$ | | | |
| 5. $(n + 2)^3$ | 6. $(a - 1)^3$ | 7. $(x + 3)^3$ | 8. |
| $(a - 4)^3$ | | | |
| 9. $(2x + 1)^3$ | 10. $(4c - 3)^3$ | | |