



## OPERACIONES CON MONOMIOS

### MULTIPLICACIÓN DE MONOMIOS:

Para multiplicar monomios debemos multiplicar los coeficientes y aplicamos la multiplicación de bases iguales, es decir, sumamos los exponentes de las variables en común.

Ejms.:  
1.  $\underbrace{(7m) (4m)} = 28m^2$        $m^1 \cdot m^1 = m^{1+1} = m^2$

2.  $\underbrace{3x^4 \cdot 2x^5} = 6x^9$        $x^4 \cdot x^5 = x^{4+5} = x^9$

3.  $\underbrace{(8a^5 b^4) (2a^4 b^3)} = 16a^9 b^7$        $a^5 \cdot a^4 = a^9$  ;  $b^4 \cdot b^3 = b^7$

4.  $\underbrace{(9m^4 n^2) (4m^5 n \cdot p)} = 36m^9 n^3 p$        $m^4 \cdot m^5 = m^9$     $n^2 \cdot n = n^3$   
*p* está solo se escribe igual.

5.  $\underbrace{(x^5 y^3) (xy) (x^2 y^9)} = x^8 y^{13}$       Agrupamos las letras iguales.

### PRACTIQUEMOS

#### MULTIPLICA:

- $(2x) (3x) (4x) =$
- $5m^4 \cdot 6m^4 =$
- $8a^3 b^5 \cdot 7a^2 b =$
- $(6x^4 y^5) (5x^2 y^3) =$
- $2ab^2 \cdot 3a^4 b^3 c =$
- $(4m^5 n^4 p^2) (8m^2 n p^3) =$
- $(3x^5 y^4) (2x^3 y) (4xy^2) =$
- $(12m^5 n) (15mn^4) =$
- $3m^4 n^2 \cdot 8m^4 \cdot 2n^6 =$
- $5x \cdot 5y \cdot 6x^3 \cdot y^5 =$
- $a^4 b^5 \cdot 3b^5 \cdot 2a^4 =$
- $6m^5 n^4 \cdot 8m^4 n^9 =$

#### DIVISIÓN DE MONOMIOS:

Para dividir monomios debemos dividir los coeficientes y aplicamos la división de bases iguales, es decir, restamos los exponentes de las variables en común.

Ejms.:

$$1. \quad \frac{25m^4 \div 5m^2}{\quad} = 5m^2 \rightarrow m^4 \div m^2 = m^{4-2} = m^2$$

$$2. \quad \frac{36x^4y^5 \div 12x^2y^3}{\quad} = 3x^2y^2 \rightarrow x^4 \div x^2 = x^{4-2} = x^2 \quad ; \quad y^5 \div y^3 = y^{5-3} = y^2$$

$$3. \quad 54a^2b^3 \div 9a^2b^2 = 6b \rightarrow a^2 \div a^2 = a^0 = 1 \quad ; \quad b^3 \div b^2 = b$$

$$4. \quad \frac{100a^5m^4n^5}{10am^3n^2} = 10a^4mn^3 \rightarrow a^5 \div a = a^4 \quad ; \quad m^4 \div m^3 = m \quad ; \quad \frac{n^5}{n^2} = n^3$$

$$5. \quad \frac{48x^5y^6z}{6xy^6} = 8x^4z \quad \frac{x^5}{x} = x^4 \quad ; \quad \frac{y^6}{y^6} = y^0 = 1 \quad ; \quad z \rightarrow \text{se escribe igual.}$$

## PRACTIQUEMOS

**DIVIDIR:**

$$1. \quad 45m^5n^4 \div 5m^3n^2 =$$

$$2. \quad \frac{32x^4y^5z^9}{8x^4y^2z^6} =$$

$$3. \quad \frac{27a^6b^5c^4d}{3a^4b^2c^4d} =$$

$$4. \quad \frac{42m^2n^6z^4}{6mn^4} =$$

$$5. \quad 12x^5y^6z \div 6x^3y^4z$$

$$6. \quad \frac{81a^4b^5m^6n^9}{9a^4b^3mn^6} =$$

$$7. \quad \frac{x^5y^6z^4}{x^2y^6z} =$$

$$8. \quad 24m^4n^4p^{20} \div 6m^3n^2p^{16} =$$

$$9. \quad \frac{64b^5c^9d^{10}}{8b^5c^5d^{15}} =$$

$$10. \quad \frac{121p^9q^{10}r^{12}}{11p^6q^7r^8} =$$

$$11. \quad \frac{40x^5y^9}{10x^3} =$$

$$12. \quad \frac{72a^6bd^5}{4abd^4} =$$



**Efectúa:**

1.  $7x^3 \cdot 4x^5 y^8 z =$  \_\_\_\_\_

2.  $5a^3 b^2 \cdot 4a^4 b c^2 =$  \_\_\_\_\_

3.  $2x \cdot 3y \cdot 4y^3 =$  \_\_\_\_\_

4.  $3mn \cdot 5mn^2 \cdot 4n^3 =$  \_\_\_\_\_

5.  $49xy^5 \div 7y^3 =$  \_\_\_\_\_

6.  $120a^4 b^7 \div 5b^6 =$  \_\_\_\_\_

7.  $49xy^5 \div 7y^3 =$  \_\_\_\_\_

8.  $2m^2 n^3 \cdot 4m^5 \cdot 2n^7 =$  \_\_\_\_\_

9.  $64a^7 b^8 \div 4a^5 b^3 =$  \_\_\_\_\_

10.  $\frac{81x^5 y^2 z^6}{3xyz^3} =$  \_\_\_\_\_

11.  $\frac{32mn^4 x^6 y^7}{4n^2 x^4 y^5} =$  \_\_\_\_\_

12.  $2x \cdot 3y \cdot 5x^2 \cdot y^4 =$  \_\_\_\_\_

13.  $5a^3 \cdot 3b \cdot 4ab^2 =$  \_\_\_\_\_

14.  $54a^3 b^2 c^7 \div 3abc^5 =$  \_\_\_\_\_

15.  $2m^3 \cdot 3n^4 \cdot 4m =$  \_\_\_\_\_

16.  $m^5 \cdot n^6 \cdot m^8 \cdot 5mn^4 =$  \_\_\_\_\_

17.  $x^5 y^3 \cdot x^6 \cdot 2y^6 =$  \_\_\_\_\_

18.  $\frac{20m^5 n^4}{10m^3} =$

19.  $144a^7 b^8 \div 12ab^4 =$

20.  $15m^5 n^4 \div 5m^2 n^3 =$