

Guía de repaso

1. Factoriza las siguientes expresiones.

- $7x + y - xy - 7 - z^2 + xz^2$
- $a^2y + ab^2 - axy - b^2x$
- $10xy^2 - 5x^2y + 4my - 2mx$
- $16amx - 8amy + 2x - y$
- $\frac{2}{9}a^3b - \frac{1}{3}x^2ya - \frac{4}{3}a^2bx + 2x^3y$
- $4x^4 + 4x^2y^3 + y^6$
- $121a^4b^8 + \frac{1}{49}x^6 - \frac{22}{7}a^2b^4x^3$
- $\frac{81}{25}b^2c^4 + 36bc^2 + 100$

- $0,25x^8 - \frac{1}{3}x^4m^6 + \frac{1}{9}m^{12}$
- $130m^2n^2x^4 + 25m^6n^4 + 169x^8$
- $4a^2 - 9b^4$
- $\frac{9}{49}m^4n^2 - x^6$
- $\frac{49}{144}a^6 - \frac{121}{169}m^4$
- $0,16m^4n^2 - 9a^6b^8$
- $\frac{1}{36}x^2 - 0,09y^2$
- $\frac{1}{9}a^4b^6 - \frac{1}{4}n^2$

2. Resuelve las siguientes ecuaciones.

- $(2x + 5)^2 = (-3 + 2x)^2$
- $\frac{x}{2} + \frac{x}{3} + \frac{x}{4} = 26$
- $\left(\frac{2}{3}x + 1\right)^2 = \left(\frac{2}{3}x + 1\right)\left(\frac{2}{3}x - 1\right)$
- $ax - \frac{1}{3} = 2x$
- $mx - \frac{1}{2}x = 5$

- $3m(5x + 1) = 10 + 3m$
- $\frac{mx+2m}{\frac{m}{n}} = \frac{xn+2n}{\frac{n}{m}}$
- $\frac{a}{x} - 2 = \frac{b}{x}$
- $\frac{x+2}{x-a} = m$

3. Factoriza completamente los siguientes polinomios.

- $4x^2 - 12x + 9$
- $16 - 8x + x^2$
- $\frac{1}{9}m^8 - m^4 + \frac{9}{4}$

- $x^4 - 2x^3 + x^2$
- $a^4 - 4a^2 - 3a^3 + 12a$

Respuestas

1.

- $(x - 1)(7 - y + z^2)$
- $(ay + b^2)(a - x)$
- $(2y - x)(5xy + 2m)$
- $(2x - y)(8am + 1)$
- $\left(\frac{2}{3}a^2b - x^2y\right)\left(\frac{1}{3}a - 2x\right)$
- $(2x^2 + y^3)^2$
- $(11a^2b^4 - \frac{1}{7}x^3)^2$
- $\left(\frac{9}{5}bc^2 + 10\right)^2$

- $\left(0,5x^4 - \frac{1}{3}m^6\right)^2$
- $(5m^3n^2 + 13x^4)^2$
- $(2a - 3b^2)(2a + 3b)^2$
- $\left(\frac{3}{7}m^2n + x^3\right)\left(\frac{3}{7}m^2n + x^3\right)$
- $\left(\frac{7}{12}a^3 + \frac{11}{13}m^2\right)\left(\frac{7}{12}a^3 - \frac{11}{13}m^2\right)$
- $(0,4m^2n - 3a^3b^4)(0,4m^2n + 3a^3b^4)$
- $\left(\frac{1}{6}x + 0,3y\right)\left(\frac{1}{6}x - 0,3y\right)$
- $\left(\frac{1}{3}a^2b^3 - \frac{1}{2}n\right)\left(\frac{1}{3}a^2b^3 + \frac{1}{2}n\right)$

$$2) \text{ a) } x = -0,5 \quad \text{b) } x = 24 \quad \text{c) } x = -1,5 \quad \text{d) } x = \frac{1}{3(a-2)} \quad \text{e) } x = \frac{10}{2m-1}$$
$$\text{f) } x = \frac{2}{3m} \quad \text{g) } x = -2 \quad \text{h) } x = \frac{a-b}{2} \quad \text{i) } x = \frac{am+2}{m-1}$$

$$3) \text{ a) } 4 \left(x - \frac{3}{2} \right)^2$$

$$\text{b) } (x - 4)^2$$

$$\text{c) } \frac{1}{9} \left(m - \frac{\sqrt{3}}{\sqrt[4]{2}} \right)^2 \left(m + \frac{\sqrt{3}}{\sqrt[4]{2}} \right)^2 \left(m^2 + \frac{3}{\sqrt{2}} \right)^2$$

$$\text{d) } x^2(x - 1)^2$$

$$\text{e) } a(a - 2)(a + 2)(a - 3)$$