

Nombre:

Fecha:

No uses bolígrafo rojo ni lápiz.

Completa tus respuestas con los cálculos correspondientes, limpios y ordenados.

1. (1p) Calculate the numerical value of:

a) $2x - 3y + 2$ (if $x = 2$ and $y = -3$)

b) $1 - 2ab - 3b^2$ (if $a = 4$ and $b = -2$)

2. (1p) Say if the following expressions are monomials or not, and write the coefficient, grade and non-numerical part of the monomials:

a) $\frac{3x^2}{4}$ b) $-\frac{3xy^4}{5ab}$ c) $\sqrt{4x^5}$ d) $\sqrt{4xy^2}$ e) $2x^3 - 4x$

3. (3p) Do the following operations with monomials

$$3a^3 + 5a^3 =$$

$$4b - 9b =$$

$$2x + 5x^2 =$$

$$3x^2 \cdot 4x^3 =$$

$$6y^2 \cdot (-4y) =$$

$$3a^3b^4 \cdot 7ab^6 =$$

$$4a^5 \div 2a^4 =$$

$$18a^3b^5 \div 6ab^3 =$$

$$16x^{300} \div 8x^{295} =$$

$$3y^2 - 2y + 6y =$$

$$\frac{5a^2b^3}{2} \cdot \frac{4a^3b^4}{3} =$$

$$20x^3y^2 \div (-5xy^2) =$$

4. (1p) Simplify the following algebraic fractions:

$$\frac{8a^2}{4a^3} =$$

$$\frac{5ab^7}{10b^9} =$$

$$\frac{10x^{34}}{20x^{40}} =$$

$$\frac{12x^3y^5}{9x^4y} =$$

5. (2p) Solve the following first-degree equations with one unknown:

a) $7x + 2 = 4x - 7$

b) $\frac{x}{5} - 2 = 4$

c) $2(x + 5) = 4(1 - x)$

d) $\frac{x}{3} + 1 = \frac{5}{2}$

6. (1p) If we add sixteen units to a number, we get three times the number. What is this number? Write the corresponding equation and solve it.

7. (1p) María tiene 4 años menos que Begoña, y entre las dos suman 22 años. ¿Cuántos años tiene cada una? Escribe la correspondiente ecuación y resuélvela para hallar sus edades.

1. (1p) a) 15 b) 5

2. (1p) a) $\frac{3x^2}{4}$ coefficient: $\frac{3}{4}$ grade: 2 non-numerical part: x^2
d) $\sqrt{4}xy^2$ coefficient: $\sqrt{4}$ grade: 3 non-numerical part: xy^2

3. (3p) $8a^3$ $-5b$ $2x + 5x^2$
 $12x^5$ $-24y^3$ $21a^4b^{10}$
 $2a$ $3a^2b^2$ $2x^5$
 $3y^2 + 4y$ $\frac{10a^5b^7}{3}$ $-4x^2$

4. (1p) a) $\frac{2}{a}$ b) $\frac{a}{2b^2}$ c) $\frac{1}{2x^6}$ d) $\frac{4y^4}{3x}$

5. (2p) a) $x = -3$ b) $x = 30$ c) $x = -1$ d) $x = \frac{9}{2}$

6. (1p) $x + 16 = 3x \Rightarrow$ The number is $x = 8$

7. (1p) $x + x - 4 = 22 \Rightarrow$ Edad de Begoña $x = 13$ años
Edad de María $x - 4 = 9$ años