EXAMEN GLOBAL SEGUNDA EVALUACIÓN - 3º ESO

Exercise 1: (3 points) Factor the following polynomials and indicate their roots:

a) $P(x) = x^4 - x^3 - 18x^2 + 16x + 32$

b) $Q(x) = x^4 - 34x^2 + 225$

c) $R(x) = x^6 - 4x^5 + 7x^4 - 28x^3$

Exercise 2: (1.5 points) Solve the following simultaneous equations using the indicated method:

a) $\left.\begin{array}{l} \frac{x}{8} + \frac{3y}{4} = 17 \\ \frac{5x}{4} - \frac{7y}{5} = -8 \end{array}\right\}$ Substitution (1)

b) $\left.\begin{array}{l} 5x + 7y = 0 \\ 3x + 4y = 1 \end{array}\right\}$ Elimination (0.5)

Exercise 3: (1.5 points) Solve the following equations:

a) $(x-1)^2 - (2x+4)^2 = 5 - x$

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

Exercise 4: (2 points) Simplify:

a) $\frac{x^3 + 2x^2 - x - 2}{\left(x^2 - 1\right)\left(7x^3 + 14x^2\right)} =$ (1.25)

b) $\frac{x^4yz^3 + x^2y^2z^3 + x^2yz^4}{x^3yz^2 + xy^2z^2 + xyz^3} =$ (0.75)

Exercise 5: (0.75 points) Escribe y desarrolla una ecuación cuyas soluciones sean x = 2 doble y x = -3

Exercise 6: (1.25 points) Work out:

$$\frac{1}{x^2 - 9} + \frac{1}{x^2 + 2x - 3} - \frac{1}{x^2 + 6x + 9} =$$

Tip: You don't have to multiply the factors in the denominator