RATIONAL NUMBERS AND POLYNOMIALS TEST - 2° ESO

Exercise 1: (1 point) One hundred and twenty five grams of raspberries cost 1.95€.

a) What's the price of a kilogram of raspberries?

b) I need two and a half kilos of raspberries for some cakes. How much is it going to cost?

Exercise 2: (0.75 points) I have a collection of 25 books and they occupy a distance of 0.875 m when I place them on a shelf. How thick is every book?

Exercise 3: (1.5 points) Classify these decimal numbers and then turn them into fractions:

a) $21.\overline{532} =$

b) $5.278278 =$

c) $1.32\overline{794} =$

d) $5.0123456789\cdots =$

Exercise 4: (1.5 points) Given the polynomials:

$A(x) = 5x^3 - x^2 - 9x - 12$

$B(x) = -3x^3 - 2x^2 + 8$

$C(x) = 2x - 1$

Work out the value of the following operations:

a) $A + B =$

b) $A - B =$

c) $A \cdot C =$

Exercise 5: (0.75 points) Evaluate the polynomial $P(x) = x^4 - 5x^3 + 7x - 8$ when $x = 3$ and when $x = -1$

Exercise 6: (1.5 points) Expand these expressions using quadratic multiplication formulas:

a) $(5x - 7)(5x + 7) =$

b) $(x - y^7)^2 =$

c) $(w - 6)^2 =$

d) $(7x^5 + 2x^3)^2 =$

Exercise 7: (1.5 points) Take out all the common factors:

a) $12x^6 - 24x^4 + 18x^3 - 9x^2 =$

b) $u^2v^3w^2 - u^2vw^2 - u^5v^3w^7 =$

c) $5xy - 10x^2y^2 - 20x^3y =$

Exercise 8: (1.5 points) Write these numbers using scientific notation:

a) $47\,289\,657\,239\,215\,458\,932\,000\,000\,000 =$

b) $0.000\,000\,000\,000\,000\,000\,0327\,958\,931 =$

c) $85.79 \cdot 10^5 =$

d) $0.0004328 \cdot 10^{-7} =$

e) $137135.2756 \cdot 10^{-4} =$