



SECOND TERM GLOBAL TEST
2º ESO



Exercise 1: (1.25 ptos) If $P(x) = 8x^2 + 5x - 3$, $Q(x) = 7x^2 - 4x - 7$ and $R(x) = 5x - 2$ work out:

a) $P - Q = x^2 + 9x + 4$

b) $P \cdot R = 40x^3 + 9x^2 - 25x + 6$

Exercise 2: (1.5 ptos)

a) Take out common factors: $12x^5y^4 - 9x^3y^2 + 3x^2y = 3x^2y(4x^3y^3 - 3xy + 1)$

b) Expand: $(5x - 4y)^2 = 25x^2 - 40xy + 16y^2$

c) Evaluate the polynomial $P(x) = 3x^2 - 8x + 9$ when $x = -2$ $P(-2) = 37$

Exercise 3: (3 ptos) Work out:

a) $3x^2 + 6x = 0 \rightarrow x = 0 \quad x = -2$

b) $4x^2 - 16 = 0 \rightarrow x = \pm 2$

c) $81x^2 - 25 = 0 \rightarrow x = \pm 5/9$

d) $x^2 - 2x - 15 = 0 \rightarrow x = 5 \quad x = -3$

e) $x^2 + 6x + 9 = 0 \rightarrow x = -3$ double

f) $3x^2 - 5x + 2 = 0 \rightarrow x = 1 \quad x = 2/3$

Exercise 4: (1.25 ptos) We have a challenge in my high school. As a part of the Solidarity Day we want to get a lot of food in order to donate it to a food bank. The first week we collected one third of the intended quantity, and the second week, three tenths of the remaining. If we are still 266 kilos short, how many kilos of food do we need in total? Hurry, you are late !!!

We had to get a total of 570 kg of food, and we did it !!!

Exercise 5: (1 pto) In a rectangle, the base is seven centimeters less than the height, and the perimeter measures 55 cm. Find its dimensions.

The rectangle has a height of 17.25 cm and a base of 10.25 cm

Exercise 6: (1 pto) Solve the equation $(2x+1)^2 - 6 = 3x \rightarrow x = 1 \quad x = -5/4$

Exercise 7: (1 pto) Work out the value of

$$\left(4 - \frac{2}{3}\right)^{-2} - \left(\frac{2}{3} : \frac{7}{5}\right)^{-1} - 5^{-2} = -\frac{41}{20}$$

