EQUATIONS TEST – 3° ESO

Exercise 1: (1 pto) Solve the equation $(x-4)^2+12=3x$

Exercise 2: (2.5 ptos) Solve and classify the following systems of equations using the indicated method:

a) $\left.\begin{matrix}3x-y=11\\5x+3y=-5\end{matrix}\right\}$ Substitution

b) $\left.\begin{matrix}3x+4y=-2\\2x-y=7\end{matrix}\right\}$ Elimination

c) $\left.\begin{matrix}2x+y=-1\\x+2y=7\end{matrix}\right\}$ Graphical

d) $\left.\begin{matrix}10x-2y=4\\15x-3y=6\end{matrix}\right\}$

Exercise 3: (0.75 ptos) At the country fair there are two attractions that I like: the roller coaster and the Ferris wheel. If I ride the roller coaster three times and the Ferris wheel once, I have to pay fifteen euro. But if I ride the roller coaster twice and the Ferris wheel four times, I have to pay twenty-five euro. What's the price of each ride?

Exercise 4: (0.75 ptos) Find the value of *k* so that when dividing $Q(x)=kx^3-x^2+3x-7$ by $(x-2)$ the remainder is seventeen.

Exercise 5: (1.25 ptos) Divide these polynomials:

a) $(x^4+2x^3-5x^2+1):(x^2-2x)$

b) $(2x^4+4x^3-2x+5):(x+1)$

Exercise 6: (3 ptos) Factorize these polynomials and indicate their roots:

a) $P(x)=x^6-20x^4+64x^2$

b) $Q(x)=x^4-3x^3-3x^2+11x-6$

c) $S(x)=x^3+2x^2+9x+18$

Exercise 7: (0.75 ptos) I have factorized

$$R(x)=3x^5+4x^3+7x^2+8x+10=x(x-2)(x+3)(x+5)$$

and I am not that sure that I got it right. I think there are several mistakes. Just by looking at it, could you tell me everything that went wrong?