FIRST TERM GLOBAL TEST

4º ESO

Exercise 1: (2.75 ptos) Work out:

a) $\dfrac{\sqrt{7}-\sqrt{3}}{\sqrt{7}+\sqrt{3}} = \dfrac{5-\sqrt{21}}{2}$ (0.75)

b) $7(x-2)+13 \geq 4x-5(3-2x) \rightarrow x \in (-\infty, 2]$ (0.75)

c) $\sqrt{2x+3}+\sqrt{x+2}=2 \rightarrow x=-1$ (1.25)

Exercise 2: (2.25 ptos) Work out:

a) $\left.\begin{matrix} x+2y=7 \\ x^2-2y^2=-41 \end{matrix}\right\} \rightarrow \begin{matrix} x=-3, & y=5 \\ x=-11, & y=9 \end{matrix}$ (1)

b) $\left.\begin{matrix} x^2-9x+14<0 \\ 16-x^2 \leq 0 \end{matrix}\right\} \rightarrow x \in [4,7)$ (1.25)

Exercise 3: (1.5 ptos) The product of two numbers is thirty, and the difference of their squares is ninety-one. Find them. Please. The numbers are 10 and 3 or -10 and -3

Exercise 4: (1.25 ptos) Given the polynomial $P(x)=ax^2+bx-1$ find the values of a and b so that:

-) When we divide it by $(x-1)$ the remainder is 7

-) When we divide it by $(x+2)$ the remainder is -11

$a=1, \quad b=7$

Exercise 5: (2.25 ptos) Work out and simplify if possible:

a) $\dfrac{x^4-10x^2+9}{x^2-6x+9} \cdot \dfrac{x-3}{x^2-1} = x+3$ (1)

b) $\dfrac{x+4}{x+2}+\dfrac{x^2+5x}{x^2-2x-8}-\dfrac{x-2}{x-4} = \dfrac{x^2+5x-12}{x^2-2x-8}$ (1.25)