FRACTIONS, EQUATIONS, INEQUALITIES AND SYSTEMS TEST - 4º ESO

Exercise 1: (2.25 points) Work out:

a) $\frac{5}{x+3}-\frac{x-2}{x-1}+\frac{7}{x^2+2x-3}=$ **(1.5)**

b) $7x-2(x-4)\leq 5(2x+3)-1$ **(0.75)**

Exercise 2: (2 points) Solve the following radical equations:

a) $\sqrt{2x+1}+x=7$ **(0.75)**

b) $\sqrt{3x-3}-\sqrt{x-3}=2$ **(1.25)**

Exercise 3: (2.75 points) Solve the following non-linear simultaneous equations with two variables:

a) $\left.\begin{array}{l} x-y=3 \\ x^2-2y^2=17 \end{array}\right\}$ **(1.25)**

b) $\left.\begin{array}{l} xy=12 \\ 3x^2-y^2=11 \end{array}\right\}$ **(1.5)**

Exercise 4: (2.5 points) Solve the following systems of inequalities:

a) $\left.\begin{array}{l} x^2-3x-10>0 \\ 1-x^2\leq 0 \end{array}\right\}$

b) $\left.\begin{array}{l} x^2-2x+1>0 \\ x^2-9\leq 0 \end{array}\right\}$

Exercise 5: (0.5 points) Find the points where $f(x)\geq 0$: