# FIRST TERM GLOBAL TEST
## 4° ESO

**Exercise 1: (2.5 ptos)** Work out and simplify if possible:

a) $\dfrac{x^4-5x^2+4}{x^3+x^2-4x-4}=$

b) $\dfrac{3}{x-7}-\dfrac{x-5}{x^2-5x-14}+\dfrac{5x}{x+2}=$

**Exercise 2: (1 pto)** Given the polynomial $P(x)=ax^3+bx^2+5x-2$ find the values of $a$ and $b$ so that:

a) It is divisible by $(x-2)$

b) When dividing by $(x+1)$ the remainder is $-12$

**Exercise 3: (1 pto)** The difference of two numbers is 5, and the sum of their squares is 433. Find the their values.

**Exercise 4: (2.5 ptos)** Work out:

a) $\left.\begin{array}{l} 3x+4\le 7(x-2)+5x \\ x^2-4x-5<0 \end{array}\right\}$

b) $\left.\begin{array}{l} 25-x^2<0 \\ x^2-4x+3\le 0 \end{array}\right\}$

**Exercise 5: (2.25 ptos)** Work out:

a) $\left.\begin{array}{l} x^2-y=-3 \\ x^2+y^2=53 \end{array}\right\}$ (1)

b) $\sqrt{2x+6}+\sqrt{x+2}=3$ (1.25)

**Exercise 6: (0.75 ptos)** Rationalize and simplify if possible: $\dfrac{\sqrt{10}-\sqrt{8}}{\sqrt{10}+\sqrt{8}}=$