



## EQUATIONS AND SYSTEMS TEST

### 3º ESO



**Exercise 1: (3 ptos)** Solve the following second degree equations:

a)  $5x^2 + 15x = 0$

b)  $5x^2 - 80 = 0$

c)  $25x^2 - 1 = 0$

d)  $x^2 - 3x = 0$

e)  $x^2 - 14x + 49 = 0$

f)  $x^2 - 10x - 11 = 0$

**Exercise 2: (2.25 ptos)** Solve these equations:

a)  $\frac{(4x-5)^2}{x-1} = 9$  (1)

b)  $(2x+1)(2x-1) - (x-1)^2 = 31$  (1.25)

**Exercise 3: (3.5 ptos)** Solve and **classify** the following systems using the indicated method.

a)  $\begin{cases} 5x - y = 2 \\ 10x - 2y = 1 \end{cases}$  Substitution (0.75)

b)  $\begin{cases} 3x + y = 13 \\ 5x - 3y = 31 \end{cases}$  Elimination (0.75)

c)  $\begin{cases} 3x - 2y = 4 \\ 5x + 3y = 2 \end{cases}$  (0.75)

d)  $\begin{cases} 3x - y = 14 \\ x + y = 2 \end{cases}$  Graphically (1.25)

**Exercise 4: (1.25 ptos)** A couple of months ago I realized that my pink Christmas cactuses had 15 flowers but the white ones only had 10 flowers. One day I was bored, and coughing a lot, and I decided to count them. A total of 17 plants and 240 flowers. How many cactuses of each type do I have?

