EQUATIONS AND SYSTEMS TEST

3º ESO

Exercise 1: (2.5 points) Solve the following equations:

a) $14x^2+7x=0 \rightarrow x=0,\ x=-1/2$

b) $x^2-6x+9=0 \rightarrow x=3$ double

c) $x^2-x-30=0 \rightarrow x=6,\ x=-5$

d) $81x^2-49=0 \rightarrow x=\pm 7/9$

e) $10x^2+13x-3=0 \rightarrow x=-3/2,\ x=1/5$

Exercise 2: (2.5 points) Solve the following equations:

a) $(2x+3)^2+(5-x)^2=50 \rightarrow \begin{cases} x=-2 \\ x=8/5 \end{cases}$

b) $\dfrac{(3x-5)^2}{2}=2(x-1)^2 \rightarrow \begin{cases} x=3 \\ x=7/5 \end{cases}$

Exercise 3: (1 point) I have two types of plants in my house. The first type has white flowers with seven petals each, and the second type has pink flowers with five petals each. I've counted a total of 29 flowers and 169 petals. How many flowers of each type are there?

There are 12 white flowers and 17 pink flowers

Exercise 4: (4 points) Solve the following systems of equations using the indicated method.

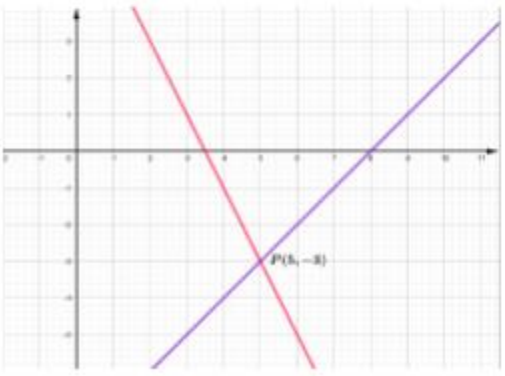
a) $\left.\begin{matrix} 2x-y=13 \\ 5x+3y=16 \end{matrix}\right\}$ Substitution $x=5,\ y=-3$ (0.75)

b) $\left.\begin{matrix} x+3y=13 \\ 2x-5y=4 \end{matrix}\right\}$ Elimination $x=7,\ y=2$ (0.75)

c) $\left.\begin{matrix} 6x+2y=8 \\ 9x+3y=12 \end{matrix}\right\}$ Whatever An infinity of solutions (0.5)

d) $\left.\begin{matrix} 5x+2y=-2 \\ 3x+7y=1 \end{matrix}\right\}$ Whatever $x=\dfrac{-16}{29},\quad y=\dfrac{11}{29}$ (1)

e) $\left.\begin{matrix} 2x+y=7 \\ x-y=8 \end{matrix}\right\}$ Graphically



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