SIMULTANEOUS EQUATIONS AND FUNCTIONS TEST - 2° ESO

Exercise 1: (1.5 points) Solve and **classify** the following systems of equations using the substitution method:

a) $\left.\begin{array}{l} 2x+y=1 \\ 3x-2y=-23 \end{array}\right\}$

b) $\left.\begin{array}{l} 5x-y=4 \\ 10x-2y=7 \end{array}\right\}$

Exercise 2: (1.5 points) Solve and **classify** these simultaneous equations using the elimination method:

a) $\left.\begin{array}{l} 4x+5y=15 \\ x-4y=9 \end{array}\right\}$

b) $\left.\begin{array}{l} 5x+3y=15 \\ 7x-2y=-10 \end{array}\right\}$

Exercise 3: (1 point) Solve and classify the following system of equations, using the graphical method:

$\left.\begin{array}{l} 3x+y=9 \\ x-y=7 \end{array}\right\}$

Exercise 4: (0.75 points) In a restaurant, they have tables for three persons and tables for four persons. If they have a total of twenty nine tables and they can sit one hundred and four people, how many tables of each type do they have?

Exercise 5: (0.75 points) If I buy two kilos of potatoes and one kilo of apples I have to pay 5€, but if I buy four kilos of potatoes and three kilos of apples, I have to pay 12€. What's the price of a kilo of each product?

Exercise 6: (1.25 points) Plot the graph of the following functions:

a) $y=2-x$

b) $y=\frac{x}{3}+2$

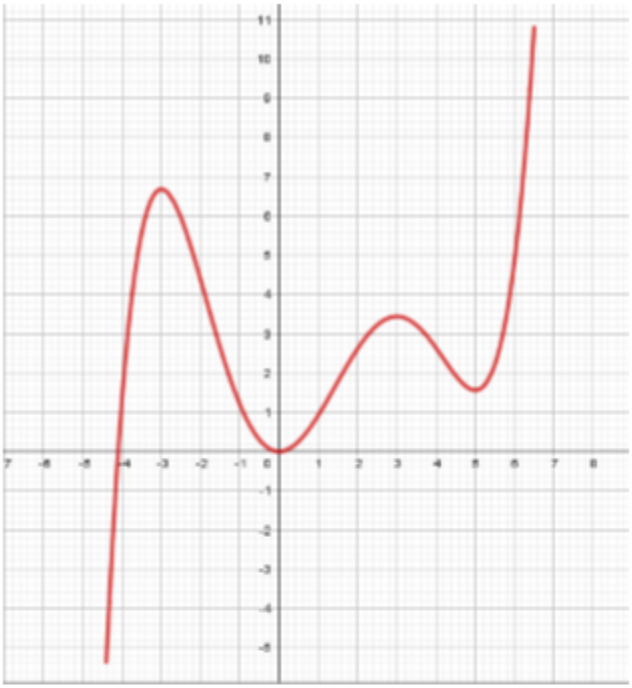
c) $y=\frac{x-1}{2}$

Exercise 7: (1.5 ptos) Plot the graph of the following functions:

a) $y=x^2-5$

b) $y=x^2-8x+12$

Exercise 8: (1.75 points) Given the graph of the following function:



a) Indicate its domain and its image. Is it a continuous function?
b) Determine the points where the function crosses the axes
c) Study its monotony
d) Study the extrema