

QUADRATIC EQUATIONS AND SYSTEMS TEST - 2º ESO

Exercise 1: (0.75 points) In a triangle, the length of the perpendicular height is seven units longer than the base and the area is 9cm^2 . Find the lengths of the base and the height.

Exercise 2: (1.5 points) Solve the following equations:

a) $(x-3)^2 - 2 = 2x$

b) $\frac{x^2-6}{5} = \frac{x^2+6}{7}$

Exercise 3: (2.5 points) Solve the following quadratic equations. Do not use the formula for the incomplete ones:

a) $3x^2 - 75 = 0$

b) $5x^2 + 7x = 0$

c) $36x^2 - 64 = 0$

d) $x^2 - 18x + 81 = 0$

e) $2x^2 - 7x + 3 = 0$

Exercise 4: (2.5 points) Solve the following simultaneous equations using the indicated method:

a) $\left. \begin{array}{l} x - 2y = 5 \\ 3x - 5y = 11 \end{array} \right\}$ Substitution (0.75)

b) $\left. \begin{array}{l} 2x - y = 16 \\ 3x + 5y = 11 \end{array} \right\}$ Elimination (0.75)

c) $\left. \begin{array}{l} x + y = 1 \\ 3x + y = 9 \end{array} \right\}$ Graphically (1)

Exercise 5: (1.75 points) Solve and classify the following systems of equations, using the method you prefer:

a) $\left. \begin{array}{l} 5x - y = 3 \\ 10x - 2y = 7 \end{array} \right\}$ (0.5)

b) $\left. \begin{array}{l} 2x + 5y = 5 \\ 5x + 7y = -4 \end{array} \right\}$ (0.75)

c) $\left. \begin{array}{l} 5x - 10y = 15 \\ 3x - 6y = 9 \end{array} \right\}$ (0.5)

Exercise 6: (0.75 points) Cuenta la leyenda que los patios de la ruta de Santa Marina tienen 300 macetas rojas, mientras que los de la ruta de San Basilio tienen 400 macetas azules. Aprovechando que el sábado por la mañana no llovía, las visité las dos. Un total de 16 patios y 5700 tiestos de colores. ¿Cuántos patios hay en cada una de las rutas?

Exercise 7: (0.25 points) If I plot the graph of an inconsistent system of equations, what do I get?