POLYNOMIALS AND EQUATIONS TEST – 3º ESO

Exercise 1: (3.25 points) Solve the following simultaneous equations using the indicated method and then classify them:

a) $\left.\begin{array}{l} 2x-y=7 \\ 6x-3y=2 \end{array}\right\}$ Substitution

b) $\left.\begin{array}{l} 2x-5y=1 \\ 3x+4y=3 \end{array}\right\}$ Elimination

c) $\left.\begin{array}{l} x-5y=6 \\ 3x+y=-14 \end{array}\right\}$ Graphically

d) $\left.\begin{array}{l} \frac{x}{2}+\frac{y}{3}=8 \\ \frac{2x}{8}-\frac{3y}{4}=-7 \end{array}\right\}$

Exercise 2: (1.5 points) Convert these expressions using notable products:

a) $z^2-16z+64=$

b) $\left(x^2w-y^3\right)\left(x^2w+y^3\right)=$

c) $4a^4+12a^2+1=$

d) $\left(7s^2t^5+2st^4\right)^2=$

Exercise 3: (3 points) Find the solutions of the following equations:

a) $(x-5)^2+(2x-20)^2=100$

b) $\frac{2x+4}{17}=\frac{3x+15}{2x}$

c) $\frac{5x-2}{4}-\frac{2x-5}{6}=\frac{x}{8}$

Exercise 4: (0.75 points) Expand $(3a+b)^4=$

Exercise 5: (1.5 points) Find the dimensions of the following right-angled triangle