



EQUATIONS TEST
3º ESO



Exercise 1: (0.75 ptos) Find the value of k so that the polynomial $P(x) = x^4 + kx^3 + 10x^2 + 17x - 18$ is divisible by $(x - 2)$

Exercise 2: (1.5 ptos) Divide the following polynomials:

a) $(3x^4 - 5x^2 + 3x - 9) : (x^2 - 2x) =$

b) $(x^4 + 9x^2 - 4x - 7) : (x + 3) =$

Exercise 3: (3 pto) Factorize the following polynomials and indicate their roots:

a) $P(x) = x^5 + 9x^4 + 23x^3 + 15x^2$

b) $Q(x) = x^5 - x^4 - 13x^3 + 13x^2 + 36x - 36$

c) $R(x) = 5x^3 + 3x^2 - 32x + 12$

Exercise 4: (0.75 ptos) I've factorized the polynomial $P(x) = 2x^5 + 12x^4 + 4x^3 + 5x + 8$ and I got

$$P(x) = 2x^5 + 12x^4 + 4x^3 + 5x + 8 = x(x-3)(x+1)(x+2)$$

Find at least five mistakes

Exercise 5: (3.25 ptos) Solve and classify the following systems of equations using the indicated method:

a) $\begin{cases} 2x - y = 11 \\ 3x - 5y = 6 \end{cases}$ Substitution

b) $\begin{cases} 6x - 3y = 9 \\ 10x - 5y = 5 \end{cases}$ Elimination

c) $\begin{cases} 5x + 2y = 1 \\ 3x + 7y = 2 \end{cases}$

d) $\begin{cases} x + y = 3 \\ 2x - y = 12 \end{cases}$ Graphical

Exercise 6: (0.75 pto) In a restaurant they have tables for three people and tables for four people. If they have a total of nineteen tables and they can sit a total of sixty-nine people, how many tables of each type are there?

PS: Due to the coronavirus pandemic, all the four-people tables are outside.

