



# Assignment



## Excercise N°1

Consider the polynomial :  $P(x) = \dots\dots\dots$

- 1- Construct the vector "P" representing this polynomial in MATLAB.
- 2- Find the "r" roots of this polynomial.
- 3- From the roots, reconstruct the polynomial P, named "z".
- 4- Evaluate this polynomial on the interval  $n = [-10, 10]$ , named "t".
- 5- Calculate the result of polynomial  $P(x)$  by polynomial  $Q(x)$ , from

The multiplication	The division	Addition	The subtraction
$A = P \times Q$	$B = \frac{A}{Q}$ et $C = \frac{A}{P}$	$D = P + Q$	$E = P - Q$

- 6- Using the preceding function, find the derivatives and integrals of the polynomials P and Q

1 →	$P(x) = x^4 - 12x^3 + 5x$	$Q(x) = 2x^3 + x^2 + 4x + 5$
2 →	$P(x) = 2x^5 - x^2 + 5x$	$Q(x) = 4x^3 - x + 5$
3 →	$P(x) = 2x^4 - 3x^2 + 5x - 1$	$Q(x) = -3x^3 - 2x - 6$
4 →	$P(x) = x^4 + 3x + 2$	$Q(x) = 2x^3 + 9x^2 + 7x - 6$
5 →	$P(x) = x^3 - 15x^2 - 24x + 360$	$Q(x) = 2x - 5$