Ex. Showing the importance of p_0 in Newton's method.

Use Newton's method to find the solution of

$$x^3 - 6x^2 + 11x - 12 = 0$$

in $[2, 5]$.

Solution: The root is $x = 4$. The Newton's method is

$$p_n = p_{n-1} - \frac{p_{n-1}^3 - 6p_{n-1}^2 + 11p_{n-1} - 12}{3p_{n-1}^2 - 12p_{n-1} + 11}$$

n	p_n	n	p_n	n	p_n
0	$\frac{7}{3}$	11	1.372802817	0	3
1	-7.111111111	12	32.57	1	6
2	-4.0743727	13	22.38944149	2	4.851066383
3	-2.031801275	14	15.60868858	3	4.2385529
4	-0.6185271	15	11.09963675	4	4.02626569
5	0.47170432	16	8.115195433	5	4.000368955
6	1.810349445	17	6.167426357	6	4.000000074
7	-4.71042586	18	4.95	7	4.
8	-2.4622339	19	4.283998419		
9	-0.923316173	20	4.03616		