Exemplo 4

a) Gráfico

f(x) $x^5 - 3{,}7\,x^4 + 7{,}4\,x^3 - 10{,}8\,x^2 + 10{,}8\,x - 6{,}8 = 0$

x	f(x)
-5	-6693,300
-4	-2667,600
-3	-878,900
-2	-222,000
-1	-40,500
0	-6,800
1	-2,100
2	3,600
3	71,500
4	414,000
5	1514,700
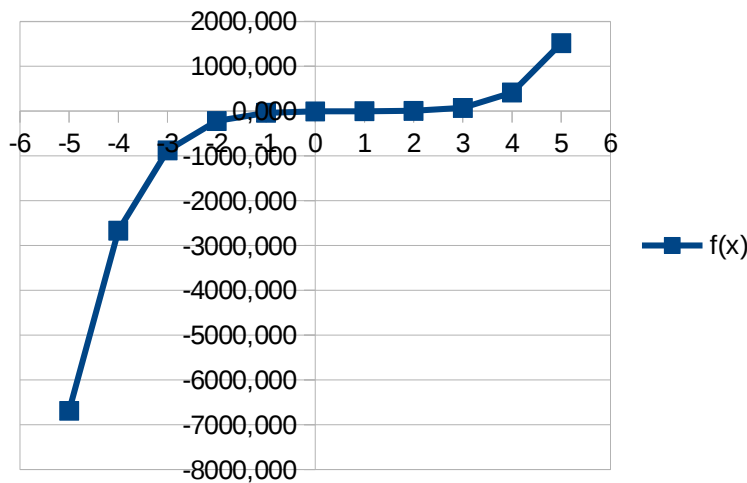
e	0,02

$P'(x) = 5\,x^4 - 14{,}8\,x^3 + 22{,}2\,x^2 - 21{,}6\,x + 10{,}8$

$x^5 - 3{,}7\,x^4 + 7{,}4\,x^3 - 10{,}8\,x^2 + 10{,}8\,x - 6{,}8 = 0$

b) Solução

a5	a4	a3	a2	a1	a0
1	-3,7	7,4	-10,8	10,8	-6,8

Passo 2	x2	1,78620			
b5	**b4**	**b3**	**b2**	**b1**	**b0 (P)**
1,00000	-1,91380	3,98157	-3,68814	4,21227	0,72393

c5	c4	c3	c2	c1 (P')
1	-0,1276	3,7536	3,0166	9,6005

$x_i - P(x)/P'(x)$

x	b0 (P)	c1 (P')	x_i+1	Tolerância	Erro |x_i+1 − x_i|
1,78620	0,7239	9,6005	1,71079	0,02	0,0754059
Referencia	0,7239	9,6005	1,71079		

Passo 3	x3	1,71079			
b5	**b4**	**b3**	**b2**	**b1**	**b0 (P)**
1,00000	-1,98921	3,99688	-3,96218	4,02154	0,08001

c5	c4	c3	c2	c1 (P')
1,00000	-0,27842	3,52056	2,06076	7,54706

$x_i - P(x)/P'(x)$

x	b0 (P)	c1 (P')	x_i+1	Tolerância	Erro |x_i+1 − x_i|	
1,71079	0,0800	7,5471	1,70019	0,02	0,0106019	FIM!
Referencia	0,0800	7,5471	1,70019			

Resposta	**1,70019**

P(x)=	0,0014

Tools → Goal seek

x	f(x)
1,700000	0,0000