Modelagem em Engenharia C & A

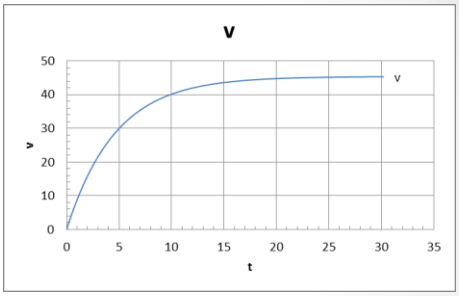
Aula 6- Busca de Soluções

Solução de Funções (0)

- Modelo do ParaquedaS

$$v = \frac{gm}{Co}(1 - e^{-\frac{Co}{m}t})$$

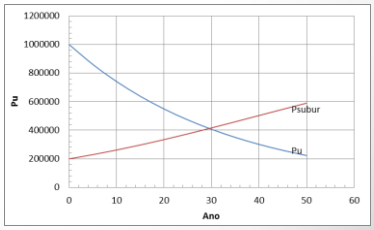
$$Co = \frac{C_D \rho A}{2}$$



- Projeção de População

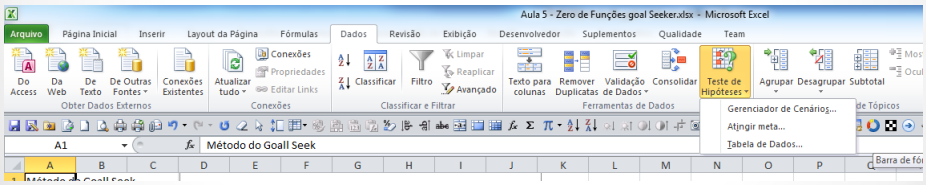
$$Pu = Pu_{\max} e^{-Kut)}$$

$$Ps = \frac{Ps_{\max}}{1 - \frac{Ps_{\max}}{Po} e^{-k_s t}}$$

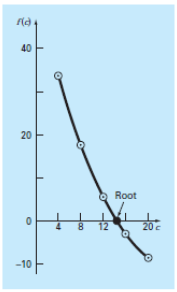


Gol Seeker

- Função do excel : Dados/Teste de Hipóteses

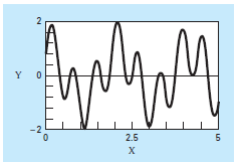


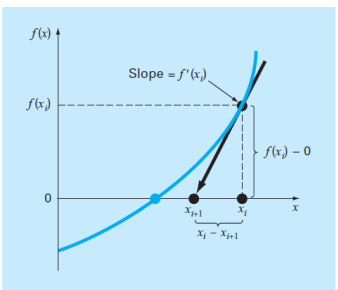
Método Newton Raphson



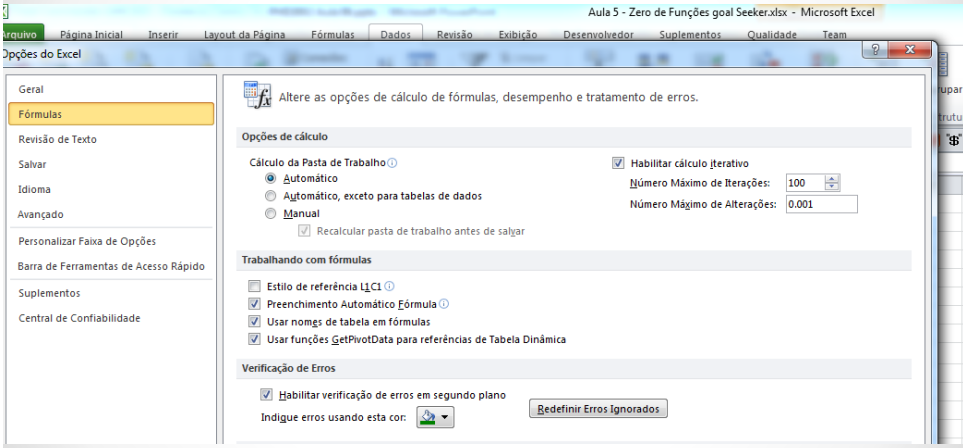
$$f'(x_i) = \frac{f(x_i) - 0}{x_i - x_{i+1}}$$

$$x_{i+1} = x_i - \frac{f(x_i)}{f'(x_i)}$$





Automatizando o NR no Excel



Newton Raphson para função discreta

Ano	Pu	Psubur
0	1000000	200000
5	860708	229472.1
10	740818.2	261865.6
15	637628.2	297069
20	548811.6	334857.9
25	472366.6	374890.1
30	406569.7	416709.9
35	349937.7	459763.6
40	301194.2	503426.4
45	259240.3	547036.9
50	223130.2	589937.2

29.52887	412769.4	412769.4	0

Função de Interpolação Linear

- Criar função no Excel

```
Function Interp(x as range, y as range, xint) as single
Dim I as integer

For i=2 to x.rows.count-1
      if xint <= x(i) then exit for
Next I

Interp = y(i-1) +(y(i)-y(i-1))/(x(i)-x(i-1))*(xint-x(i-1))

End function
```