⊞ Numerical Inverse Laplace Transform

⊞ equrep

⊞ laplace

⊟ Laplace examples

α and β values

$[\alpha L\ \beta L\ \mu L] := ILap_{\alpha\beta}(6, 20, 19)$

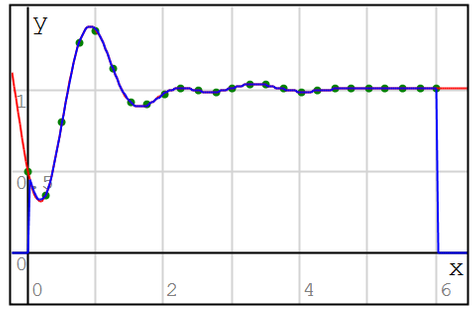
$plot := \begin{cases} f(x) \\ f_s(x) \\ \text{augment}(ft, ".", 12, "green") \end{cases}$

$N := 25$

$f_s(t) := 1 - \frac{\exp(-t)}{2} \cdot (\cos(3 \cdot t) + \sin(5 \cdot t))$

$F(s) := lt\left(f_s(t)\right) = \frac{2 \cdot \left(25 + (1+s)^2\right) \cdot \left(9 + (1+s)^2\right) - \left(5 \cdot \left(9 + (1+s)^2\right) + (1+s) \cdot \left(25 + (1+s)^2\right)\right) \cdot s}{2 \cdot \left(9 + (1+s)^2\right) \cdot \left(25 + (1+s)^2\right) \cdot s}$

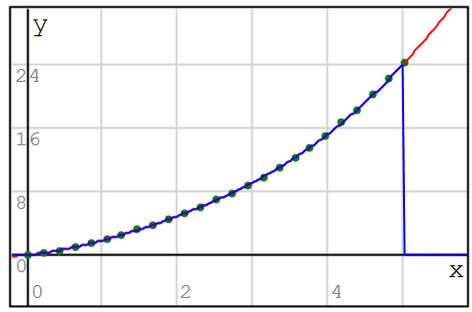
$\begin{cases} ft := ILap(F(s), 0, 6, N) \\ f(t) := cinterp(ft, t) \end{cases}$



$f_s(t) := t^2 + \sin(t)$

$F(s) := lt\left(f_s(t)\right) = \frac{s^3 + 2 \cdot \left(1 + s^2\right)}{s^3 \cdot \left(1 + s^2\right)}$

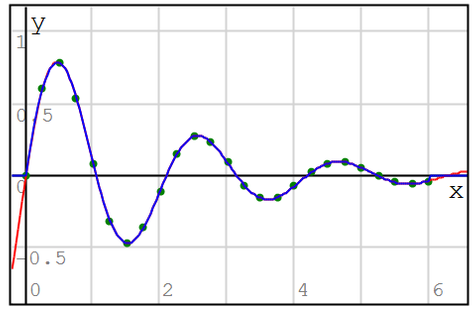
$\begin{cases} ft := ILap(F(s), 0, 5, N) \\ f(t) := cinterp(ft, t) \end{cases}$



$f_s(t) := \exp(-0.5 \cdot t) \cdot \sin(3 \cdot t)$

$F(s) := lt\left(f_s(t)\right) = \frac{12}{36 + (1 + 2 \cdot s)^2}$

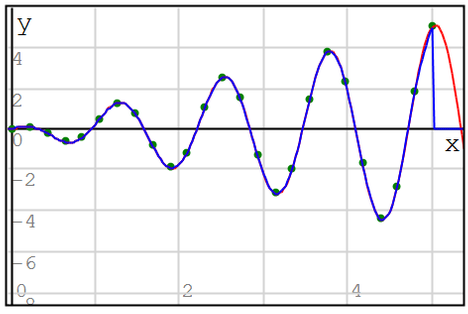
$\begin{cases} ft := ILap(F(s), 0, 6, N) \\ f(t) := cinterp(ft, t) \end{cases}$



$$f_s(t) := t \cdot \cos(5 \cdot t)$$

$$F(s) := lt\left(f_s(t)\right) = -\frac{25 - s^2}{\left(25 + s^2\right)^2}$$

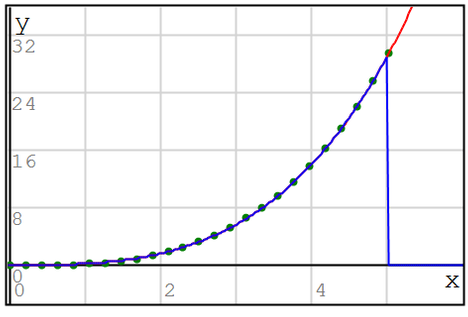
$$\begin{cases} ft := ILap\left(F(s), 0, 5, N\right) \\ f(t) := cinterp\left(ft, t\right) \end{cases}$$



$$f_s(t) := t^2 \cdot \sinh\left(\frac{t}{5}\right)$$

$$F(s) := lt\left(f_s(t)\right) = -\frac{250 \cdot \left[\left(5 \cdot s \cdot \sinh(0) + \cosh(0)\right) \cdot \left(-1 + 2\right.\right.$$

$$\begin{cases} ft := ILap\left(F(s), 0, 5, N\right) \\ f(t) := cinterp\left(ft, t\right) \end{cases}$$



Alvaro
