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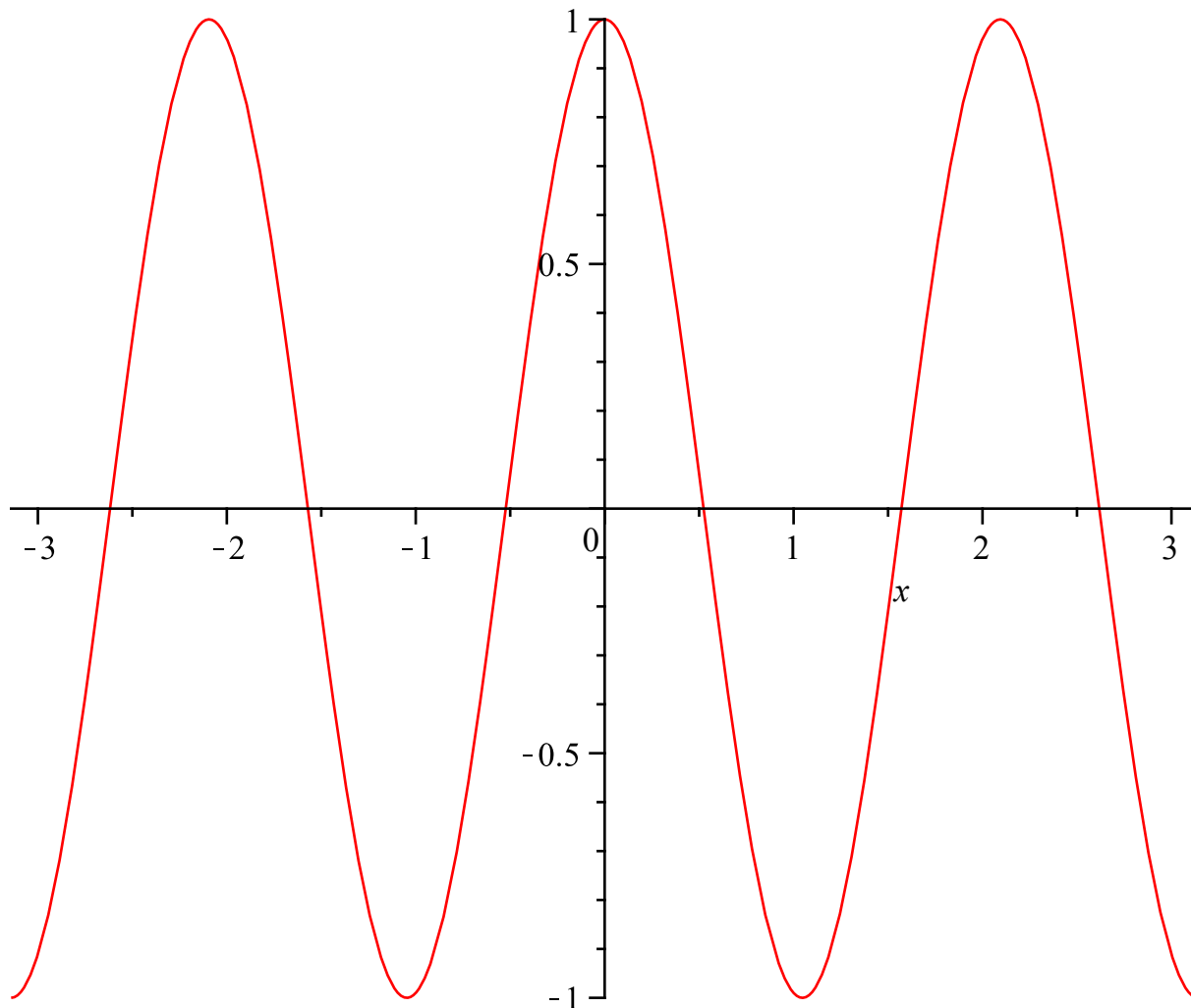
[> restart
[> B := lunes, martes, miercoles, jueves, viernes, sabado, domingo
      B := lunes, martes, miercoles, jueves, viernes, sabado, domingo (1)
[> B6
      sabado (2)
[> dia := [B]
      dia := [lunes, martes, miercoles, jueves, viernes, sabado, domingo] (3)
[> dia3
      miercoles (4)
[> DiaHabil := dia[1..5]
      DiaHabil := [lunes, martes, miercoles, jueves, viernes] (5)
[> FinSemana := dia[6..7]
      FinSemana := [sabado, domingo] (6)
[> Matriz := array([ [1, 2, 3], [4, -5, 6], [7, 8, 9] ])
      Matriz :=  $\begin{bmatrix} 1 & 2 & 3 \\ 4 & -5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$  (7)
[> Dias := {B}
      Dias := {domingo, jueves, lunes, martes, sabado, viernes, miercoles} (8)
[> DiaAlfabetico := sort(dia)
      DiaAlfabetico := [domingo, jueves, lunes, martes, miercoles, sabado, viernes] (9)
[> with(linalg) :
[> WW := wronskian([exp(3 x), cos(5 x), x·3], x)
      WW :=  $\begin{bmatrix} e^{3x} & \cos(5x) & x^3 \\ 3e^{3x} & -5\sin(5x) & 3x^2 \\ 9e^{3x} & -25\cos(5x) & 6x \end{bmatrix}$  (10)
[> Sistema := x + 2 y + 3 z = 5, -x + 6 y - 9 z = -13, 2 x - 3 y + 6 z = 3 : Sistema1; Sistema2;
      Sistema3;
      
$$\begin{aligned} x + 2 y + 3 z &= 5 \\ -x + 6 y - 9 z &= -13 \\ 2 x - 3 y + 6 z &= 3 \end{aligned}$$
 (11)
[> Raiz := solve({Sistema}, {x, y, z})
      Raiz :=  $\left\{ x = -5, y = 1, z = \frac{8}{3} \right\}$  (12)
[> Raiz1; Raiz2; Raiz3;
      
$$\begin{aligned} x &= -5 \\ y &= 1 \\ z &= \frac{8}{3} \end{aligned}$$
 (13)
[> restart

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$$\begin{aligned} &> \text{Ecuacion} := 2 \cdot y(x) \cdot (\text{diff}(y(x), x) + 2) - x \cdot (\text{diff}(y(x), x))^2 = 0 \\ &\quad \text{Ecuacion} := 2 y(x) \left(\frac{d}{dx} y(x) + 2 \right) - x \left(\frac{d}{dx} y(x) \right)^2 = 0 \end{aligned} \quad (14)$$

$$\begin{aligned} &> \text{Solucion} := \text{dsolve}(\{\text{Ecuacion}\}) : \text{Solucion}_1; \text{Solucion}_2; \text{simplify}(\text{Solucion}_3); \\ &\quad \{y(x) = 0\} \\ &\quad \{y(x) = -4x\} \\ &\quad \left\{ y(x) = \frac{1}{2} \frac{(-x + 2 \text{CI})^2}{\text{CI}} \right\} \end{aligned} \quad (15)$$

> plot(cos(3 x), x=-Pi..Pi)



> restart

> with(linalg) :

> Matriz := array([[1, 2, 3], [4, -5, 6], [7, 8, 9]])

$$\text{Matriz} := \begin{bmatrix} 1 & 2 & 3 \\ 4 & -5 & 6 \\ 7 & 8 & 9 \end{bmatrix} \quad (16)$$

> det(Matriz)

(17)

120

(17)

> *InvMatriz* := *inverse*(*Matriz*)

$$InvMatriz := \begin{bmatrix} -\frac{31}{40} & \frac{1}{20} & \frac{9}{40} \\ \frac{1}{20} & -\frac{1}{10} & \frac{1}{20} \\ \frac{67}{120} & \frac{1}{20} & -\frac{13}{120} \end{bmatrix}$$

(18)

> *Identidad* := *evalm*(*Matriz* &* *InvMatriz*)

$$Identidad := \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

(19)

> *evalm*(*Matriz*);

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & -5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

(20)

> *f* := *x*·3 − *x*·2 + *x* − 1 = 0

$$f := x^3 - x^2 + x - 1 = 0$$

(21)

> *raices* := *solve*(*f*, *x*)

$$raices := 1, I, -I$$

(22)

> *restart*

> *Ecuacion* := *diff*(*y*(*t*), t\$3) − 9 *y*(*t*) = 5·*exp*(*t*)

$$Ecuacion := \frac{d^3}{dt^3} y(t) - 9 y(t) = 5 e^t$$

(23)

> *Condiciones* := *y*(0) = 5, *D*(*y*)(0) = −3, *D*(*D*(*y*))(0) = −1;

$$Condiciones := y(0) = 5, D(y)(0) = -3, D^{(2)}(y)(0) = -1$$

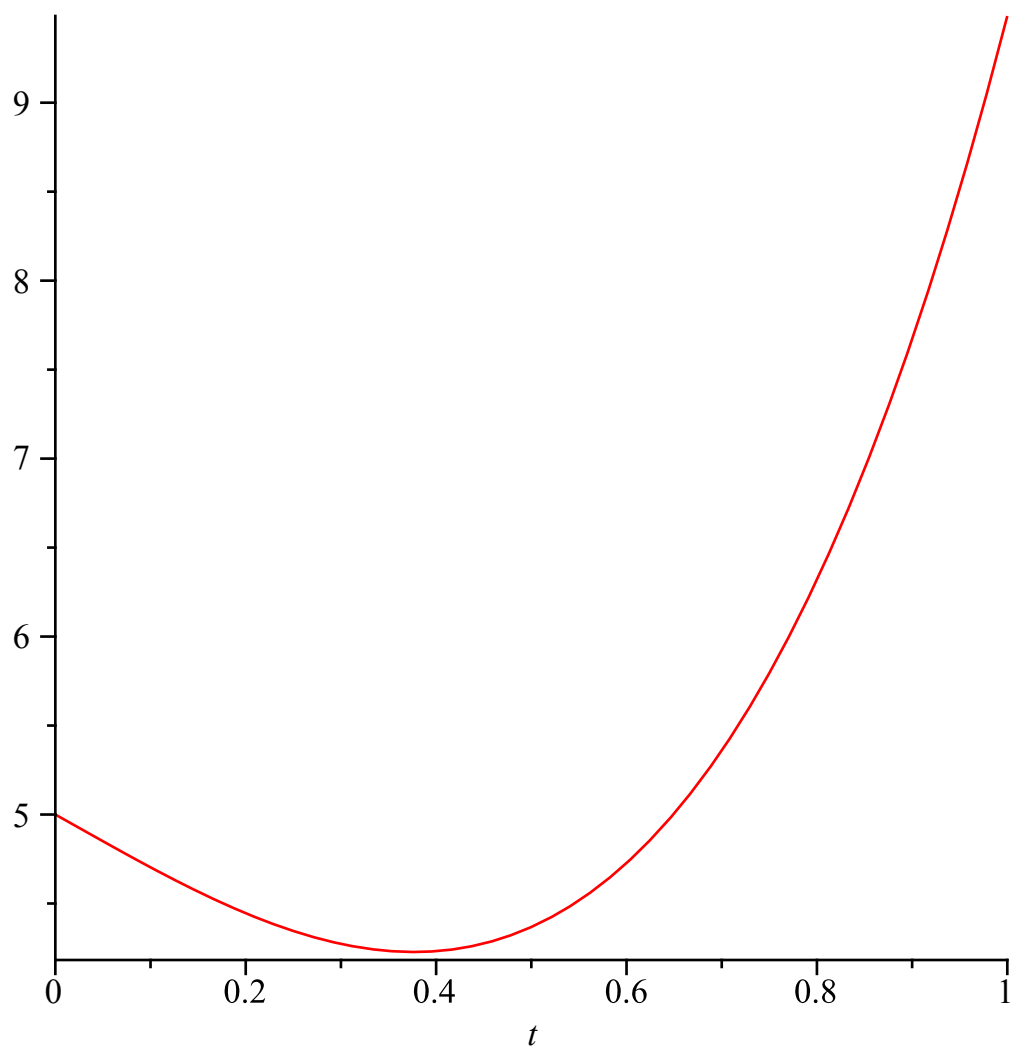
(24)

> *SolucionParticular* := *dsolve*({*Ecuacion*, *Condiciones*}) : *evalf*(%, 2)

$$y(t) = -0.62 e^t + 1.5 e^{2.1 t} + 4.2 e^{-1.0 t} \cos(1.8 t) - 0.63 e^{-1.0 t} \sin(1.8 t)$$

(25)

> *plot*(*rhs*(*SolucionParticular*), *t* = 0 ..1)



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[> restart
[> solve( { 3.2 x + 1.3 y + 4.2 z = 5, 8.7 x + 19 y + 11.2 z = 94, x +  $\frac{y}{4}$  + z = 1 }, [x, y, z] )
[ [x = 0.4969502408, y = 5.187800963, z = -0.7939004815 ] ]
[> ?dsolve
[>
[>
[>
[>
[>
[>
[>

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(26)