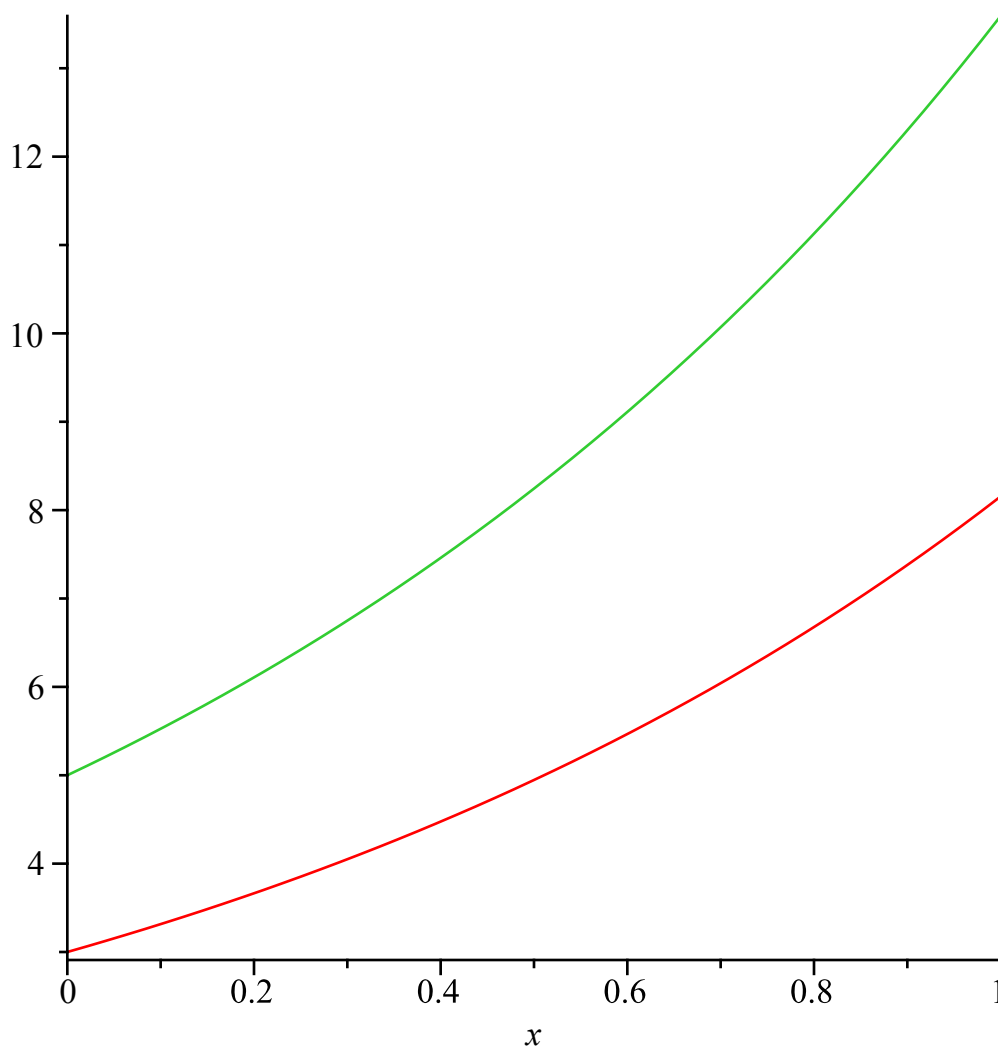


```

> restart
> Lista := Lunes, Martes, Miércoles, Jueves, Viernes, Sábado, Domingo
      Lista := Lunes, Martes, Miércoles, Jueves, Viernes, Sábado, Domingo (1)
> Lista5
      Viernes (2)
> Lista[2]
      Martes (3)
> Cuerda := [Lista]
      Cuerda := [Lunes, Martes, Miércoles, Jueves, Viernes, Sábado, Domingo] (4)
> DiaHabil := Cuerda[1..5]
      DiaHabil := [Lunes, Martes, Miércoles, Jueves, Viernes] (5)
> FinSemana := Cuerda[6..7]
      FinSemana := [Sábado, Domingo] (6)
> DiasEnOrden := sort(Cuerda)
      DiasEnOrden := [Domingo, Jueves, Lunes, Martes, Miércoles, Sábado, Viernes] (7)
> DiasClase := [Cuerda[1], Cuerda[3], Cuerda[5]]
      DiasClase := [Lunes, Miércoles, Viernes] (8)
> Lista
      Lunes, Martes, Miércoles, Jueves, Viernes, Sábado, Domingo (9)
> Conjunto := {Lista}
      Conjunto := {Domingo, Jueves, Lunes, Martes, Sábado, Viernes, Miércoles} (10)
> Ecuacion := diff(y(x), x) = y(x)
      Ecuacion :=  $\frac{d}{dx} y(x) = y(x)$  (11)
> Condicion := y(0) = 5
      Condicion := y(0) = 5 (12)
> SolucionParticular := dsolve({Ecuacion, Condicion})
      SolucionParticular :=  $y(x) = 5 e^x$  (13)
> Valor := subs(x=4, rhs(SolucionParticular))
      Valor :=  $5 e^4$  (14)
> Sistema := 2 x + 3 y = 6, x + 4 y = -5;
      Sistema :=  $2 x + 3 y = 6, x + 4 y = -5$  (15)
> Raiz := solve({Sistema})
      Raiz :=  $\left\{ x = \frac{39}{5}, y = -\frac{16}{5} \right\}$  (16)
> Comprobacion1 := subs(x=rhs(Raiz1), y=rhs(Raiz2), Sistema1)
      Comprobacion1 :=  $6 = 6$  (17)
> SolucionGeneral := dsolve(Ecuacion)
      SolucionGeneral :=  $y(x) = \_C1 e^x$  (18)
> plot([subs(_C1=3, rhs(SolucionGeneral)), subs(_C1=5, rhs(SolucionGeneral))], x=0..1)

```



```
> Ecua := x^2 - 5 x + 6 = 0
```

$$Ecua := x^2 - 5x + 6 = 0$$

(19)

```
> Raices := solve(Ecua)
```

$$Raices := 3, 2$$

(20)

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

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

(21)

```
> with(linalg) :
```

```
> Valores := det(AA)
```

$$Valores := 120$$

(22)

```
> AAmenosI := inverse(AA)
```

(23)

$$AAmenosI := \begin{bmatrix} -\frac{31}{40} & \frac{1}{20} & \frac{9}{40} \\ \frac{1}{20} & -\frac{1}{10} & \frac{1}{20} \\ \frac{67}{120} & \frac{1}{20} & -\frac{13}{120} \end{bmatrix} \quad (23)$$

> *Identidad* := evalm(AA &* AAmenosI)

$$Identidad := \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \quad (24)$$

> *WW* := wronskian([exp(x), cos(x), sin(x)], x)

$$WW := \begin{bmatrix} e^x & \cos(x) & \sin(x) \\ e^x & -\sin(x) & \cos(x) \\ e^x & -\cos(x) & -\sin(x) \end{bmatrix} \quad (25)$$

> *Compr* := simplify(det(WW)) ≠ 0

$$Compr := 2 e^x \neq 0 \quad (26)$$

> restart

> *EcuacionDiferencial* := y'' - 7·y' + 4·y = 4·exp(4 x)

$$EcuacionDiferencial := \frac{d^2}{dx^2} y(x) - 7 \left(\frac{d}{dx} y(x) \right) + 4 y(x) = 4 e^{4x} \quad (27)$$

> *SolucionGeneral* := dsolve(EcuacionDiferencial) : evalf(%, 2)

$$y(x) = e^{6.5x} _C2 + e^{0.65x} _C1 - 0.50 e^{4.x} \quad (28)$$

> *CondicionesIniciales* := y(0) = 3, D(y)(0) = -5;

$$CondicionesIniciales := y(0) = 3, D(y)(0) = -5 \quad (29)$$

> *SolucionParticular* := dsolve({CondicionesIniciales, EcuacionDiferencial}) : evalf(%, 2)

$$y(x) = -0.8 e^{6.5x} + 4.4 e^{0.65x} - 0.50 e^{4.x} \quad (30)$$

>