

```
> restart
```

```
>  
ESTE ES MI PRIMER PROGRAMA EN MAPLE
```

```
> evalf(Pi, 1000)
```

```
3.1415926535897932384626433832795028841971693993751058209749445923078164062862\  
08998628034825342117067982148086513282306647093844609550582231725359408128\  
48111745028410270193852110555964462294895493038196442881097566593344612847\  
56482337867831652712019091456485669234603486104543266482133936072602491412\  
73724587006606315588174881520920962829254091715364367892590360011330530548\  
82046652138414695194151160943305727036575959195309218611738193261179310511\  
85480744623799627495673518857527248912279381830119491298336733624406566430\  
86021394946395224737190702179860943702770539217176293176752384674818467669\  
40513200056812714526356082778577134275778960917363717872146844090122495343\  
01465495853710507922796892589235420199561121290219608640344181598136297747\  
71309960518707211349999998372978049951059731732816096318595024459455346908\  
30264252230825334468503526193118817101000313783875288658753320838142061717\  
76691473035982534904287554687311595628638823537875937519577818577805321712\  
26806613001927876611195909216420199
```

(1)

```
> EcuacionAlgebraica := x·2 + 5·x + 6 = 0
```

$$EcuacionAlgebraica := x^2 + 5x + 6 = 0$$

(2)

```
> EcuacionAlgebraica
```

$$x^2 + 5x + 6 = 0$$

(3)

```
> Raices := solve(EcuacionAlgebraica, x)
```

$$Raices := -2, -3$$

(4)

```
> EcuacionOriginal := (x - Raices[1])·(x - Raices[2]) = 0
```

$$EcuacionOriginal := (x + 2)(x + 3) = 0$$

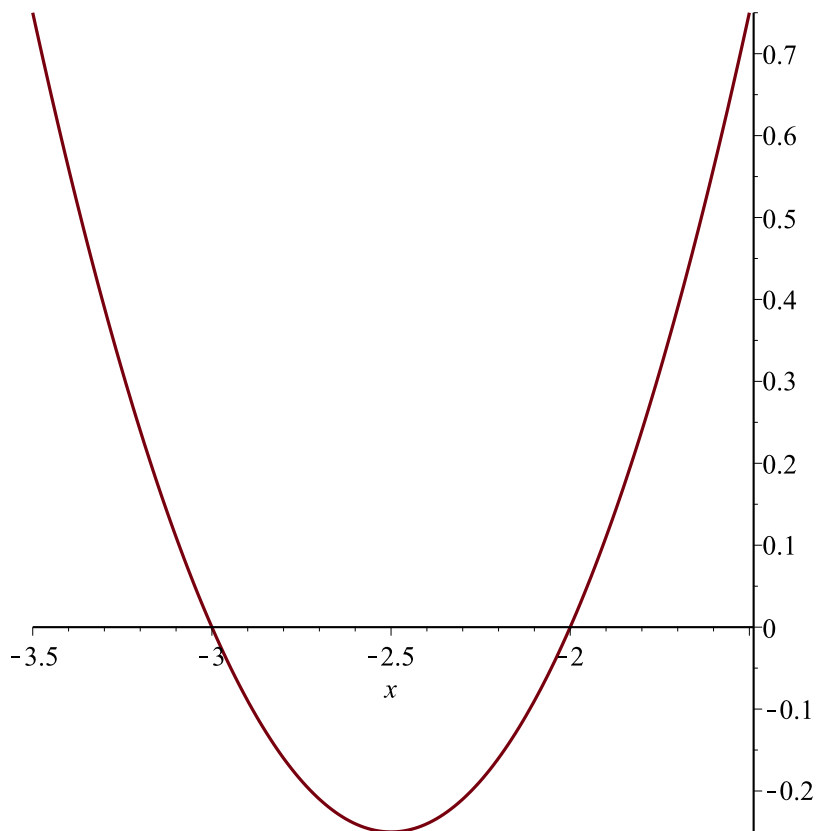
(5)

```
> Ecuacion := expand(EcuacionOriginal)
```

$$Ecuacion := x^2 + 5x + 6 = 0$$

(6)

```
> plot(lhs(Ecuacion), x = -3.5 .. -1.5)
```



```
>
```

```
> EcuacionAlgebraica; Raices; EcuacionOriginal; Ecuacion
```

$$x^2 + 5x + 6 = 0$$

$$-2, -3$$

$$(x + 2)(x + 3) = 0$$

$$x^2 + 5x + 6 = 0$$

(7)

```
> restart
```

```
> Ecuacion := expand((x - 3 + 4 I) * (x - 3 - 4 I)) = 0
```

$$Ecuacion := x^2 - 6x + 25 = 0$$

(8)

```
> Solucion := solve(Ecuacion)
```

$$Solucion := 3 + 4 I, 3 - 4 I$$

(9)

```
> Solucion[1]
```

$$3 + 4 I$$

(10)

```
> Solucion[2]
```

$$3 - 4 I$$

(11)

```
> EcuacionDiferencial := diff(y(t), t, t) + 6 * diff(y(t), t) + 8 * y(t) = 0
```

(12)

$$\text{EcuacionDiferencial} := \frac{d^2}{dt^2} y(t) + 6 \left( \frac{d}{dt} y(t) \right) + 8 y(t) = 0 \quad (12)$$

$$\begin{aligned} > \text{SolucionGeneral} := \text{dsolve}(\text{EcuacionDiferencial}, y(t)) \\ &\quad \text{SolucionGeneral} := y(t) = \_C1 e^{-2t} + \_C2 e^{-4t} \end{aligned} \quad (13)$$

$$\begin{aligned} > \text{lhs}(\text{SolucionGeneral}) \\ &\quad y(t) \end{aligned} \quad (14)$$

$$\begin{aligned} > \text{rhs}(\text{SolucionGeneral}) \\ &\quad \_C1 e^{-2t} + \_C2 e^{-4t} \end{aligned} \quad (15)$$

> restart

> DiasSemana := [lunes, martes, miércoles, jueves, viernes, sábado, domingo] :

$$\begin{aligned} > \text{DiasSemana}[3] \\ &\quad \text{miércoles} \end{aligned} \quad (16)$$

$$\begin{aligned} > \text{DiasHabiles} := \text{DiasSemana}[1..5] \\ &\quad \text{DiasHabiles} := [\text{lunes}, \text{martes}, \text{miércoles}, \text{jueves}, \text{viernes}] \end{aligned} \quad (17)$$

$$\begin{aligned} > \text{FinSemana} := \text{DiasSemana}[6..7] \\ &\quad \text{FinSemana} := [\text{sábado}, \text{domingo}] \end{aligned} \quad (18)$$

$$\begin{aligned} > \text{DiasOrden} := \text{sort}(\text{DiasSemana}) \\ &\quad \text{DiasOrden} := [\text{domingo}, \text{jueves}, \text{lunes}, \text{martes}, \text{miércoles}, \text{sábado}, \text{viernes}] \end{aligned} \quad (19)$$

$$\begin{aligned} > \text{Dias} := [\text{DiasSemana}[1], \text{DiasSemana}[3], \text{DiasSemana}[5]] \\ &\quad \text{Dias} := [\text{lunes}, \text{miércoles}, \text{viernes}] \end{aligned} \quad (20)$$

$$\begin{aligned} > \text{DiasAlgebraicos} := \{\text{lunes}, \text{martes}, \text{miércoles}, \text{jueves}, \text{viernes}, \text{sábado}, \text{domingo}\} \\ &\quad \text{DiasAlgebraicos} := \{\text{domingo}, \text{jueves}, \text{lunes}, \text{martes}, \text{sábado}, \text{viernes}, \text{miércoles}\} \end{aligned} \quad (21)$$

$$\begin{aligned} > \text{Matriz} := \text{Matrix}([ [1, 2, 3], [4, 5, 6], [7, 8, 9] ]) \\ &\quad \text{Matriz} := \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix} \end{aligned} \quad (22)$$

$$\begin{aligned} > \text{Matriz}[2, 3] \\ &\quad 6 \end{aligned} \quad (23)$$

$$\begin{aligned} > \text{Matriz}[3, 1] \\ &\quad 7 \end{aligned} \quad (24)$$

> with(plots) :

> restart

$$\begin{aligned} > \text{with}(\text{linalg}) \\ &[\text{BlockDiagonal}, \text{GramSchmidt}, \text{JordanBlock}, \text{LUdecomp}, \text{QRdecomp}, \text{Wronskian}, \text{addcol}, \\ &\quad \text{addrow}, \text{adj}, \text{adjoint}, \text{angle}, \text{augment}, \text{backsub}, \text{band}, \text{basis}, \text{bezout}, \text{blockmatrix}, \text{charmat}, \\ &\quad \text{charpoly}, \text{cholesky}, \text{col}, \text{coldim}, \text{colspace}, \text{colspan}, \text{companion}, \text{concat}, \text{cond}, \text{copyinto}, \\ &\quad \text{crossprod}, \text{curl}, \text{definite}, \text{delcols}, \text{delrows}, \text{det}, \text{diag}, \text{diverge}, \text{dotprod}, \text{eigenvals}, \\ &\quad \text{eigenvalues}, \text{eigenvectors}, \text{eigenvects}, \text{entermatrix}, \text{equal}, \text{exponential}, \text{extend}, \text{ffgausselim}, \\ &\quad \text{fibonacci}, \text{forwardsub}, \text{frobenius}, \text{gausselim}, \text{gaussjord}, \text{geneqns}, \text{genmatrix}, \text{grad}, \\ &\quad \text{hadamard}, \text{hermite}, \text{hessian}, \text{hilbert}, \text{htranspose}, \text{ihermite}, \text{indexfunc}, \text{innerprod}, \text{intbasis}, \\ &\quad \text{inverse}, \text{ismith}, \text{issimilar}, \text{iszero}, \text{jacobian}, \text{jordan}, \text{kernel}, \text{laplacian}, \text{leastsqrs}, \text{linsolve}, \\ &\quad \text{matadd}, \text{matrix}, \text{minor}, \text{minpoly}, \text{mulcol}, \text{mulrow}, \text{multiply}, \text{norm}, \text{normalize}, \text{nullspace}, \end{aligned} \quad (25)$$

*orthog, permanent, pivot, potential, randmatrix, randvector, rank, ratform, row, rowdim, rowspace, rowspan, rref, scalarmul, singularvals, smith, stackmatrix, submatrix, subvector, sumbasis, swapcol, swaprow, sylvester, toeplitz, trace, transpose, vandermonde, vecpotent, vectdim, vector, wronskian]*

