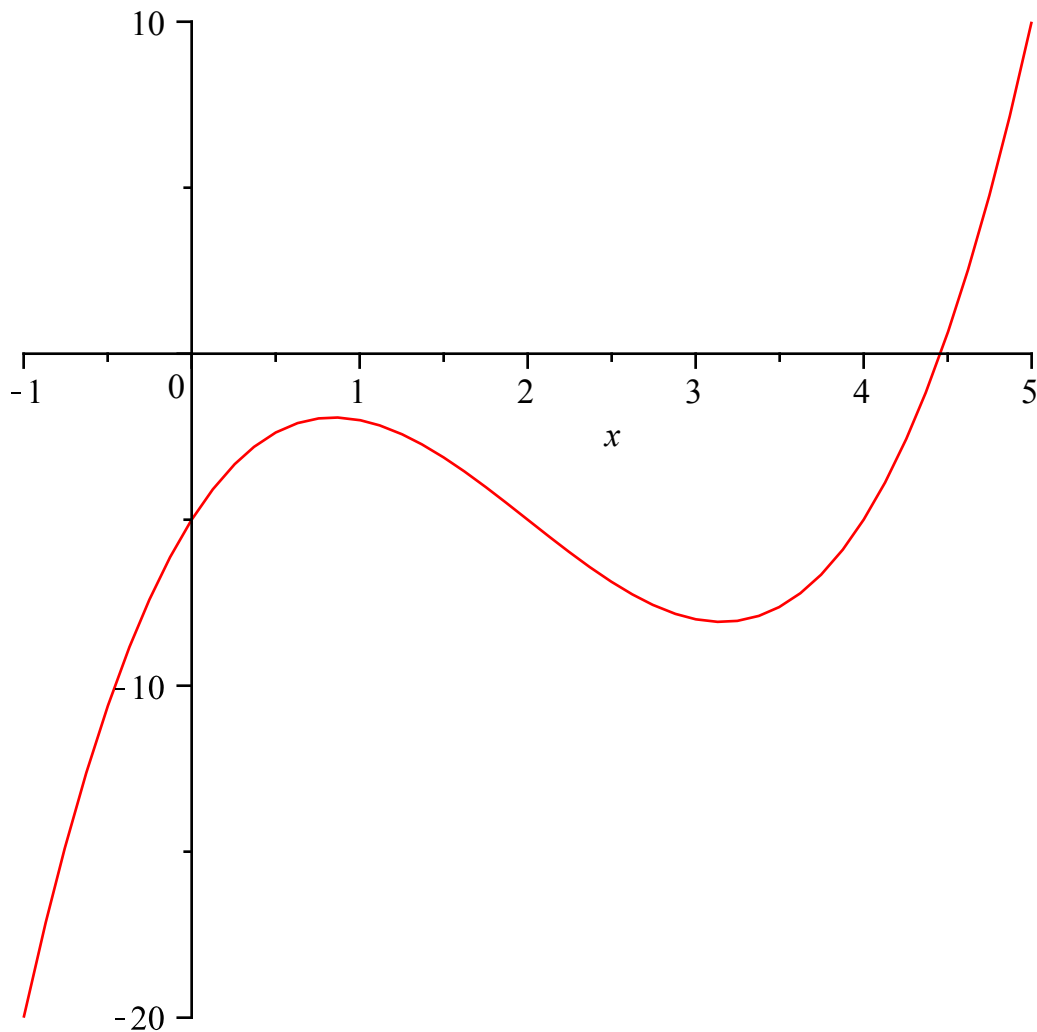


```
> restart
> EcuacionAlgebraica := x^3 - 6*x^2 + 8*x - 5 = 0
      EcuacionAlgebraica := x^3 - 6 x^2 + 8 x - 5 = 0 (1)
```

```
> LadoIzquierdo := lhs(EcuacionAlgebraica)
      LadoIzquierdo := x^3 - 6 x^2 + 8 x - 5 (2)
```

```
> rhs(EcuacionAlgebraica)
      0 (3)
```

```
> plot(LadoIzquierdo, x=-1..5)
```



```
> Raiz := solve(EcuacionAlgebraica) : evalf(Raiz[1], 5); evalf(Raiz[2], 5); evalf(Raiz[3], 5)
      4.4567
      0.7717 + 0.72565 I
      0.7717 - 0.72565 I (4)
```

```
> Raiz[1]
      1/6 (540 + 12 sqrt(1257))^(1/3) + 8/(540 + 12 sqrt(1257))^(1/3) + 2 (5)
```

```
> EcuacionOriginal := expand((x - Raiz[1]) * (x - Raiz[2]) * (x - Raiz[3])) = 0 : evalf(%, 2)
      0 (6)
```

$$-5.0 + 8. x + x^3 - 6. x^2 = 0. \quad (6)$$

> EcuacionAlgebraica;

$$x^3 - 6 x^2 + 8 x - 5 = 0 \quad (7)$$

> Raiz<sub>2</sub>

$$-\frac{1}{12} (540 + 12 \sqrt{1257})^{1/3} - \frac{4}{(540 + 12 \sqrt{1257})^{1/3}} + 2 + \frac{1}{2} I \sqrt{3} \left( \frac{1}{6} (540 + 12 \sqrt{1257})^{1/3} - \frac{8}{(540 + 12 \sqrt{1257})^{1/3}} \right) \quad (8)$$

> restart

> Ecuacion := x·3 - 9·x·2 + 26·x - 24 = 0

$$Ecuacion := x^3 - 9 x^2 + 26 x - 24 = 0 \quad (9)$$

> Raiz := solve(Ecuacion)

$$Raiz := 2, 3, 4 \quad (10)$$

> EcuacionOriginal := expand( (x - Raiz<sub>1</sub>) · (x - Raiz<sub>2</sub>) · (x - Raiz<sub>3</sub>) ) = 0

$$EcuacionOriginal := x^3 - 9 x^2 + 26 x - 24 = 0 \quad (11)$$

> restart

> alpha

$$\alpha \quad (12)$$

> Alpha

$$A \quad (13)$$

> beta

$$\beta \quad (14)$$

> Beta

$$B \quad (15)$$

> gamma

$$\gamma \quad (16)$$

> Gamma

$$\Gamma \quad (17)$$

> evalf(pi)

$$\pi \quad (18)$$

> PI

$$\Pi \quad (19)$$

> evalf(Pi)

$$3.141592654 \quad (20)$$

> evalf(Pi, 200)

$$3.1415926535897932384626433832795028841971693993751058209749445923078164062862\backslash \quad (21)$$

$$08998628034825342117067982148086513282306647093844609550582231725359408128\backslash$$

$$4811174502841027019385211055596446229489549303820$$

> evalf(Pi, 10000) :

> RaizDeDos := sqrt(2)

$$RaizDeDos := \sqrt{2} \quad (22)$$

$$\begin{aligned} > evalf(RaizDeDos) \\ &1.414213562 \quad (23) \end{aligned}$$

$$\begin{aligned} > evalf(RaizDeDos, 500) \\ &1.4142135623730950488016887242096980785696718753769480731766797379907324784621\backslash \quad (24) \\ &07038850387534327641572735013846230912297024924836055850737212644121497099\backslash \\ &93583141322266592750559275579995050115278206057147010955997160597027453459\backslash \\ &68620147285174186408891986095523292304843087143214508397626036279952514079\backslash \\ &89687253396546331808829640620615258352395054745750287759961729835575220337\backslash \\ &53185701135437460340849884716038689997069900481503054402779031645424782306\backslash \\ &84929369186215805784631115966687130130156185689872372 \end{aligned}$$

$$\begin{aligned} > \text{Phi} := \frac{(1 + \text{sqrt}(5))}{2} \\ &\Phi := \frac{1}{2} + \frac{1}{2} \sqrt{5} \quad (25) \end{aligned}$$

$$\begin{aligned} > evalf(\text{Phi}, 100) \\ &1.6180339887498948482045868343656381177203091798057628621354486227052604628189\backslash \quad (26) \\ &02449707207204189391138 \end{aligned}$$

$$\begin{aligned} > evalf(\exp(1), 100) \\ &2.7182818284590452353602874713526624977572470936999595749669676277240766303535\backslash \quad (27) \\ &47594571382178525166427 \end{aligned}$$

Este es un comentario que no se procesa

$$\begin{aligned} > \text{LeyEuler} := \exp(\text{Pi} \cdot I) \\ &\text{LeyEuler} := -1 \quad (28) \end{aligned}$$

$$\begin{aligned} > \text{sqrt}(7) \cdot \sin\left(\frac{\text{Pi}}{4}\right); evalf(\%); evalf(\%, 3); evalf(\% + 0.0000010000000000000001) \\ &\frac{1}{2} \sqrt{7} \sqrt{2} \\ &1.870828693 \\ &1.87 \\ &1.870001000 \quad (29) \end{aligned}$$

$$\begin{aligned} > restart \\ > f := x \cdot 2 \cdot \cos(3x) \cdot \exp(5x) \\ &f := x^2 \cos(3x) e^{5x} \quad (30) \end{aligned}$$

$$\begin{aligned} > \text{DerivadaF} := \text{Diff}(f, x) = \text{diff}(f, x) \\ &\text{DerivadaF} := \frac{d}{dx} (x^2 \cos(3x) e^{5x}) = 2x \cos(3x) e^{5x} - 3x^2 \sin(3x) e^{5x} + 5x^2 \cos(3x) e^{5x} \quad (31) \end{aligned}$$

$$\begin{aligned} > \text{IntegralF} := \text{Int}(f, x) = \text{expand}(\text{int}(f, x)) : evalf(\%, 3) \\ &\int x^2 \cos(3x) e^{5x} dx = 0.588 (e^x)^5 x^2 \cos(x)^3 - 0.441 (e^x)^5 x^2 \cos(x) - 0.111 (e^x)^5 x \cos(x)^3 \quad (32) \\ &+ 0.0830 (e^x)^5 x \cos(x) - 0.00204 (e^x)^5 \cos(x)^3 + 0.00153 (e^x)^5 \cos(x) \\ &+ 0.353 (e^x)^5 x^2 \sin(x) \cos(x)^2 - 0.0882 (e^x)^5 x^2 \sin(x) - 0.208 (e^x)^5 x \sin(x) \cos(x)^2 \end{aligned}$$

$$\begin{aligned} & + 0.0519 (e^x)^5 x \sin(x) + 0.0403 (e^x)^5 \sin(x) \cos(x)^2 - 0.0101 (e^x)^5 \sin(x) \\ & \textcolor{red}{>} \textit{IntegralFdefinida} := \textit{Int}(f, x=0..5) = \textit{evalf}(\textit{expand}(\textit{int}(f, x=0..5))) \\ & \textit{IntegralFdefinida} := \int_0^5 x^2 \cos(3x) e^{5x} dx = -1.019003312 \cdot 10^{11} \end{aligned} \quad \textbf{(33)}$$