(1)

> **12+4-5;**



> **2^10;**



> **sin(0.1);**



> **(a+b)(a-b);**



(2)

> **diff(3\*x^3+2\*x^2-5,x);**



> **diff(sqrt(1+x^4),x);**



> **diff(exp(x)\*sin(x)\*cos(x),x);**



(3)

> **int(3\*x^3+2\*x^2-5,x=0..1);**



> **int(1/x^2,x=0..infinity);**



> **int(exp(-x^2),x=-infinity..infinity);**



(4)

> **limit(sin(x)/x,x=0);**



> **limit((x^3+3\*x^2-5)/(2\*x^3-7\*x),x=infinity);**

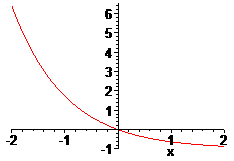


> **limit((cos(x)+1)/(x-Pi),x=Pi);**



(5)

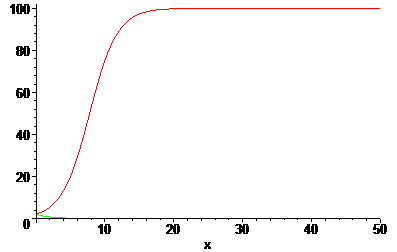
> **plot(exp(-x)-1,x=-2..2);**



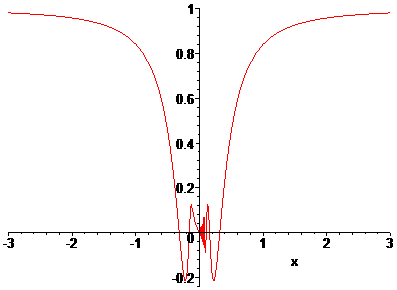
> **f:=(x,r)->(200\*exp(r\*x))/(2\*(exp(r\*x)-1)+100);**



> **plot([f(x,0.5),f(x,-0.5)],x=0..50);**

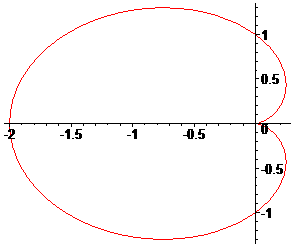


> **plot(x\*sin(1/x),x=-3..3);**

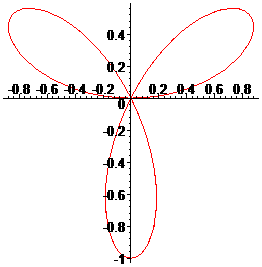


(6)

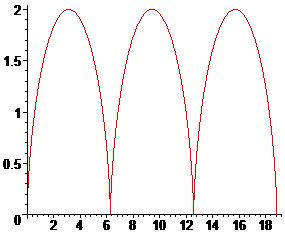
> **plot([(1-cos(t))\*cos(t),(1-cos(t))\*sin(t),t=0..2\*Pi]);**



> **plot([sin(3\*t)\*cos(t),sin(3\*t)\*sin(t),t=0..2\*Pi]);**



> **plot([t-sin(t),1-cos(t),t=0..6\*Pi]);**

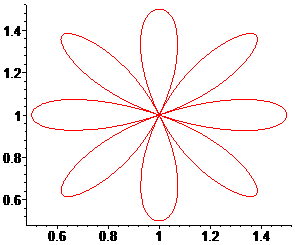


(7)

> **f:=(t,s)->1-((s\*cos(4\*t)\*cos(t))/sqrt(1-s^2\*cos(4\*t)^2\*sin(t)^2));**



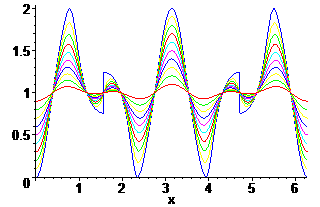
> **plot([f(t-Pi/2,0.5),f(t,0.5),t=0..2\*Pi]);**



> **list\_f:=f(x,i/10)$i=1..10;**

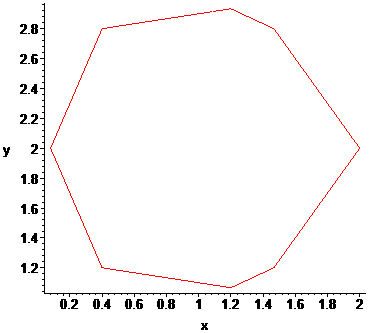


> **plot([list\_f],x=0..2\*Pi);**

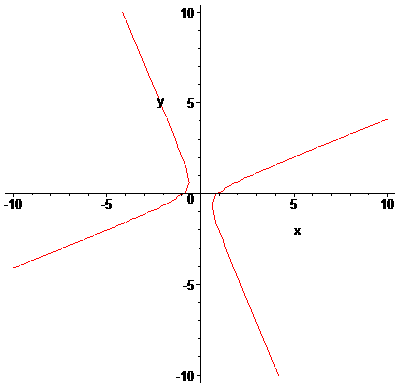


(8)

> **implicitplot(x^2+y^2-2\*x-4\*y+4=0,x=-10..10,y=-10..10);**



> **implicitplot(x^2-2\*x\*y-y^2=1,x=-10..10,y=-10..10);**

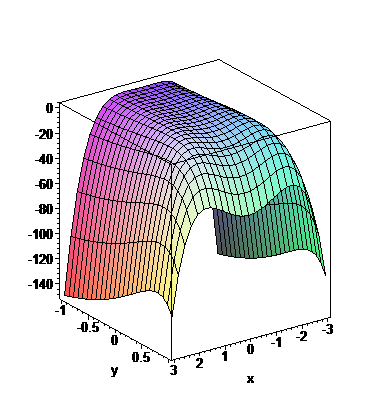


(9)

> **z:=(x,y)->4\*x^2\*exp(y)-2\*x^4-exp(4\*y);**



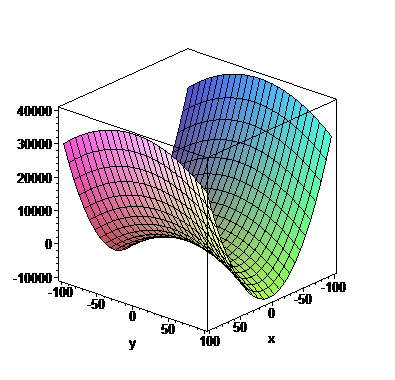
> **plot3d(z(x,y),x=-3..3,y=-1..1);**



> **z:=(x,y)->4\*x^2-y^2;**



> **plot3d(z(x,y),x=-100..100,y=-100..100);**



(10)

> **A:=matrix([[1,2,-1],[0,1,0],[3,-1,2]]);**



> **B:=matrix([[1,2,3],[0,1,-1],[4,2,2]]);**



> **C:=matrix([[2,1,1],[0,1,-1],[4,2,2]]);**



> **evalm(2\*A-B&\*C);**



> **evalm(B^(-1));**



> **eigenvals(C);**



> **eigenvects(C);**

