

```
> with(DEtools) ;
```

```
[DENormal, DEplot, DEplot3d, DEplot_polygon, DFactor, DFactorLCLM, DFactorsols, Dchangevar, GCRD, LCLM, MeijerGsols, PDEchangecoords, RiemannPsols, Xchange, Xcommutator, Xgauge, abelsol, adjoint, autonomous, bernoullisol, buildsol, buildsym, canoni, caseplot, casesplit, checkrank, chinisol, clairautsol, constcoeffsols, convertAlg, convertsys, dalembertsol, dcoeffs, de2diffop, dfieldplot, diffop2de, dperiodic_sols, dpolyform, dsubs, eigenring, endomorphism_charpoly, equinv, eta_k, eulersols, exactsol, expsols, exterior_power, firint, firtest, formal_sol, gen_exp, generate_ic, genhomosol, gensys, hamilton_eqs, hypergeomsols, hyperode, indicialeq, infgen, initialdata, integrate_sols, intfactor, invariants, kovacicols, leftdivision, liesol, line_int, linearsol, matrixDE, matrix_riccati, maxdimsystems, moser_reduce, muchange, mult, mutest, newton_polygon, normalG2, odeadvisor, odepde, parametricsol, phaseportrait, poincare, polysols, power_equivalent, ratsols, redode, reduceOrder, reduce_order, regular_parts, regularsp, remove_RootOf, riccati_system, riccatisol, rifread, rifsimp, rightdivision, rtaylor, separablesol, solve_group, super_reduce, symgen, symmetric_power, symmetric_product, symtest, transinv, translate, untranslate, varparam, zoom]
```

```
> with(plots) ;
```

```
Warning, the name changecoords has been redefined
```

```
[animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal, conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, cylinderplot, densityplot, display, display3d, fieldplot, fieldplot3d, gradplot, gradplot3d, graphplot3d, implicitplot, implicitplot3d, inequal, interactive, listcontplot, listcontplot3d, listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, odeplot, pareto, plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d, polyhedra_supported, polyhedraplot, replot, rootlocus, semilogplot, setoptions, setoptions3d, spacecurve, sparsematrixplot, sphereplot, surfdata, textplot, textplot3d, tubeplot]
```

```
> deq:=D(y)(t)+2*y(t)=0;
```

$$deq := D(y)(t) + 2 y(t) = 0$$

```
> k:=dfieldplot(deq,y(t),t=-3..3,y=-3..3):
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```
> a:=dsolve(deq,y(t));
```

$$a := y(t) = _C1 e^{(-2 t)}$$

```
> b:=subs(_C1=3,a);
```

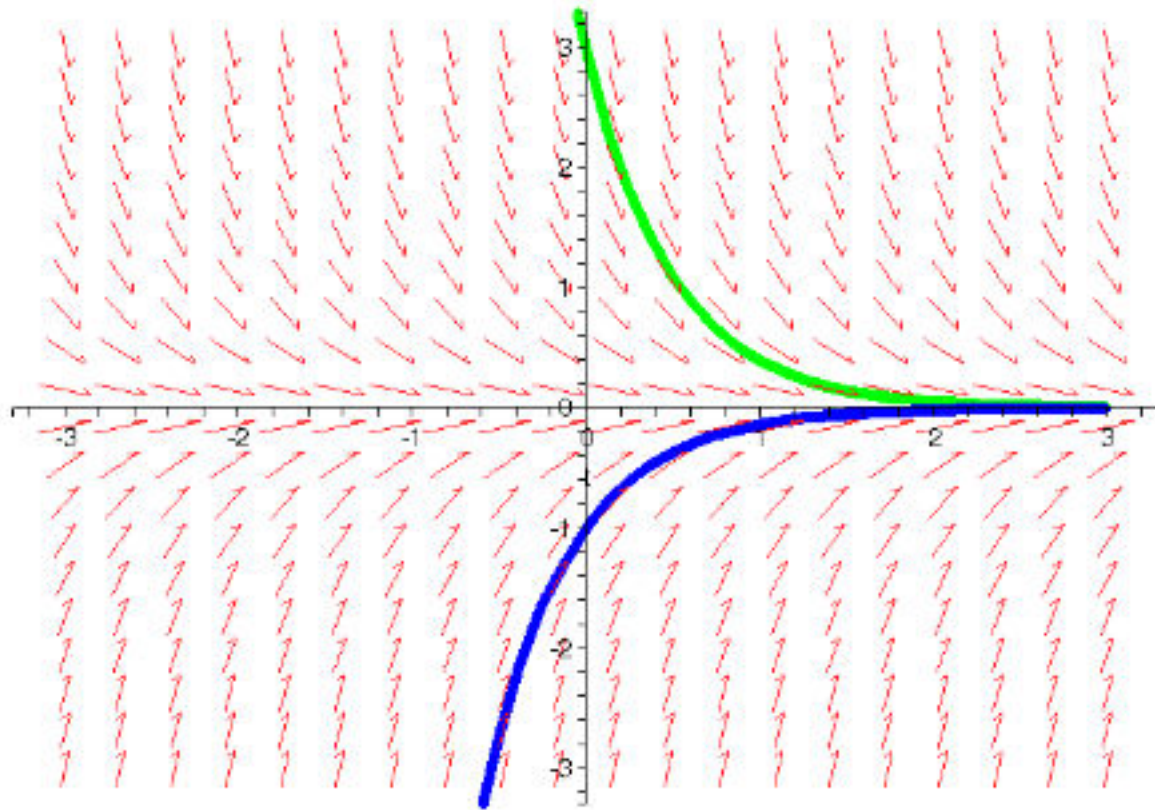
$$b := y(t) = 3 e^{(-2 t)}$$

```
> c:=plot(rhs(b),t=-3..3,color=green,thickness=4):
```

```
> d:=subs(_C1=-1,a):
```

```
> e:=plot(rhs(d),t=-3..3,color=blue,thickness=4):
```

```
> display(c,e,k);
```



```
> dsolve({ D@@2 (y) (t) - 2*D(y) (t) + y(t) = exp(t) , y(0) = 2 , D(y) (0) = -3 } , y(t)) ;
```

$$y(t) = 2 e^t - 5 e^t t + \frac{1}{2} t^2 e^t$$

```
> plot(rhs(%), t=0..1) ;
```

