L2 Mathématiques

Solution Rattrapage Outils de Programmation 2 (SCILAB)

Exercice 1

1. diag(3*ones(4,1),-1)+diag(ones(5,1))+diag(2*ones(4,1),1) **(1 point)**
2. A*ones(5 , 1) **(1.5 point)**
3. k=find(A==2) **(1.5 point)**

Exercice 2

1. P=poly([-3,-1,1],"x","roots"), **(1.25 point)**
   Q=poly([-1,0,0,1],"x","coef")**(1 point)**
2. gcd([P,Q]) , **(0.75 point)**
   lcm([P,Q]) **(0.75 point)**
3. derivat(P) **(0.75 point)**
4. factors(Q) **(0.75 point)**
5. horner(P,sqrt(2)) **(0.75 point)**

Exercice 3

1. function **y**=f(**x**) **(0.5 point)**
   y=cos(**x**)+exp(-**x**) **(0.5 point)**
   endfunction **(0.5 point)**
   fsolve(11,f) **(0.5 point)**
2. function **y**=g(**x**) **(0.5 point)**
   y=sqrt(1-**x**^2) **(0.5 point)**
   endfunction **(0.5 point)**
   intg(-1,1,g) **(0.5 point)**
3. function **yprim**=h(**x**, **y**) **(0.5 point)**
   yprim=2***x***sin(**y**) **(0.5 point)**

endfunction **(0.5 point)**

x0=0, **(0.5 point)**

y0=1, **(0.5 point)**

x=x0:0.1:%pi , **(0.5 point)**

y=ode(y0,x0,x,h), **(0.5 point)**

plot(x,y) **(0.5 point)**

4. t=linspace(0,4*%pi,100) , **(1 point)**

param3d(cos(t),sin(t),t) **(1 point)**