

```
> restart; Digits:=200; alias (sigma=sigma(x), phi=phi(x), psi=psi(z))
:with(PDEtools):with(plots):with(LinearAlgebra):with(linalg):
Digits := 200 (1)
```

```
> S6:=diff(sigma,x)*(x*(x-1)*diff(sigma,x,x))^2+(diff(sigma,x)*(2*
sigma-(2*x-1)*diff(sigma,x))+nu[1]*nu[2]*nu[3]*nu[4])^2-product
(diff(sigma,x)+nu[k]^2,k=1..4):
```

```
> a:=-3;b:=-15;n:=3;
```

```
a := -3
```

```
b := -15
```

```
n := 3 (2)
```

```
> phi:=simplify(expand(sort(hypergeom([a,b],[c],x))))*x^(b):
```

```
> phi:for K from 1 to n do;l[K]:=diff(%,x)*x*(x-1);od:wronskian(
[phi,seq(l[k],k=1..n-1)],x):for K from 1 to n do;h[K]:=Row(%,1);
row(%,2);wronskian(%,x*(x-1),x):od:simplify(<seq(simplify(h[k]),
k=1..n)>):tau:=factor(expand(det(%,x)))*x^((1-n-2*b)*n/2)*(x-1)^((1-
n)*(n/2)):
```

```
> RootOf(tau,x):A:=evalf(allvalues(%)):
```

```
> animate( complexplot, [[A],thickness=4,color=blue,symbolsize=25],
c=-20..10,style=point,symbol=solidcircle,frames=200);
```

$c = -20.$

