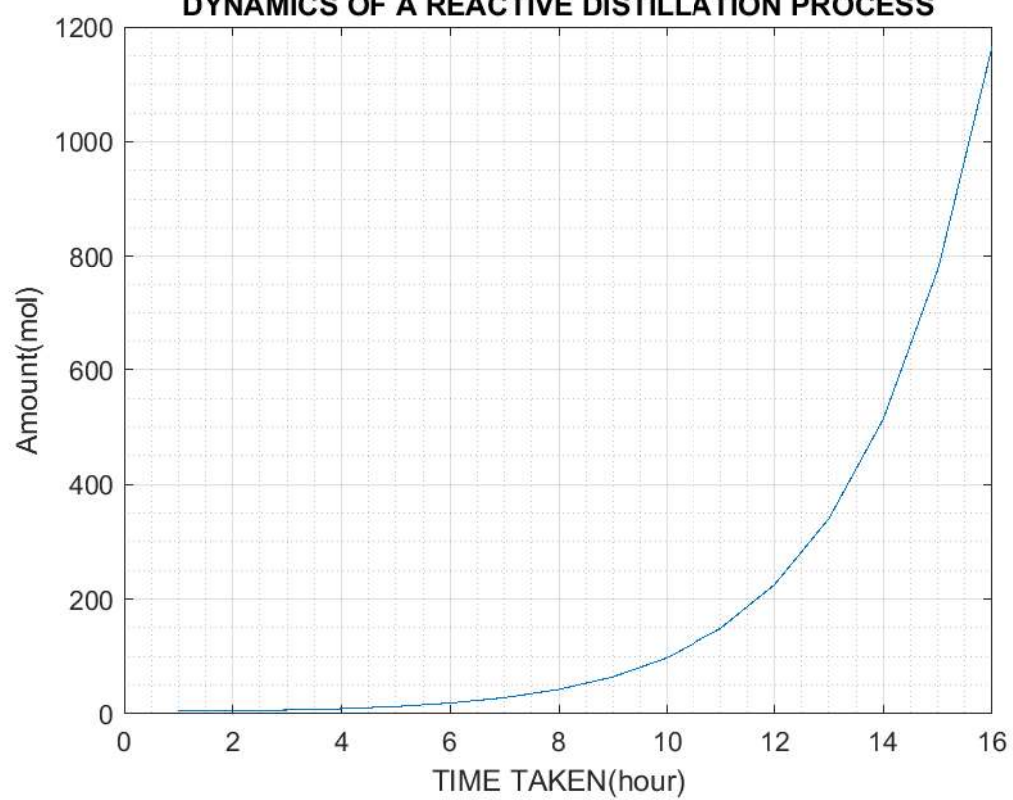


```
commandwindow
clc
syms n(t)
ode= diff(n,t,2) - diff(n,t) - (12*n) == 144*(t^3) + 12.5
dn= diff(n,t);
cond=[ n(0)==5, dn(0)==-0.5];
Ysolu = dsolve(ode,cond)
t= [0:0.1:1.5];
Miebi = subs(Ysolu)
plot (Miebi)
grid on
grid minor
```

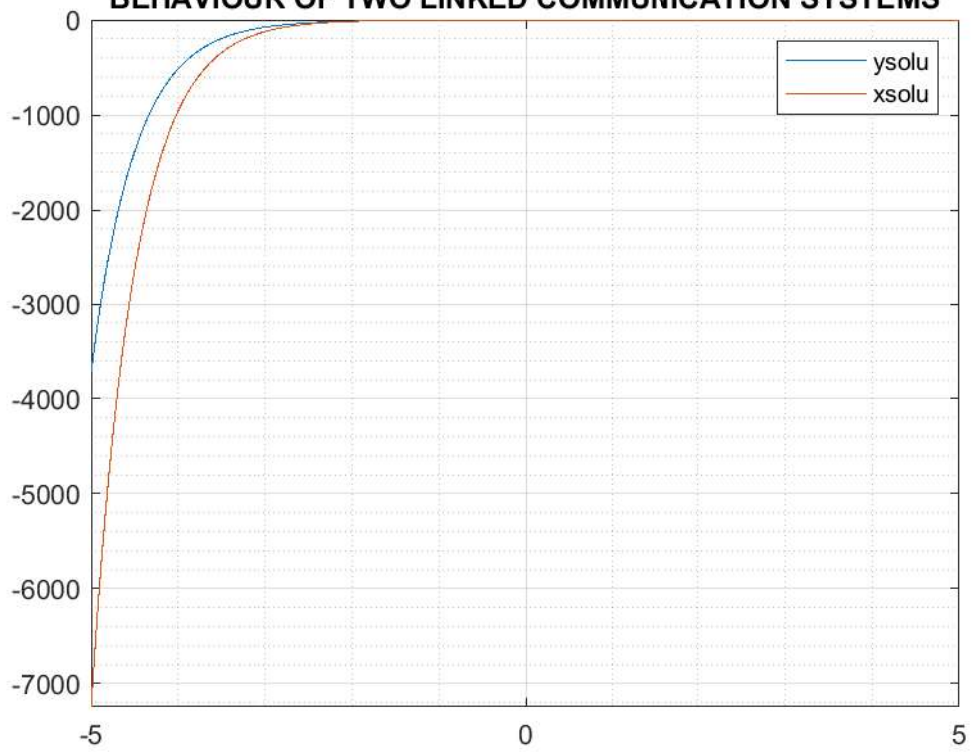
### DYNAMICS OF A REACTIVE DISTILLATION PROCESS



```
commandwindow
clc
syms y(t) x(t)
ode1= diff(y,t)-(2*x)== exp(-2*t)
ode2 = diff(x,t)+ y == exp(-t)
odes= [ode1;ode2]
cond= [y(0)==0, x(0)==0];
S= dsolve(odes,cond)
xsolu= S.x
ysolu= S.y
fplot(xsolu)
fplot(ysolu)
grid on
grid minor
legend( 'xsolu', 'Location', 'best')
legend( 'ysolu' , 'Location', 'best')
```

```
commandwindow
clc
syms y(t) x(t)
ode1= diff(y,t)-(2*x)== exp(-2*t)
ode2 = diff(x,t)+ y == exp(-t)
odes= [ode1;ode2]
cond= [y(0)==0, x(0)==0];
S= dsolve(odes,cond)
xsolu= S.x
ysolu= S.y
fplot(xsolu)
hold on
fplot(ysolu)
grid on
grid minor
legend( 'ysolu' , 'xsolu')
```

### BEHAVIOUR OF TWO LINKED COMMUNICATION SYSTEMS



```
commandwindow
clc
syms t w s x k a
x= k*(exp(-a*t)*sin(5*w*t)*cos(3*w*t))
F= laplace(x,t,s)
simplify (F)
pretty(F)
```

```
commandwindow
clc
syms t s pi
F= (pi)/((s^2)+(15*pi*s)+ (24*(pi^3)))
P= ilaplace(F)
simplify (P)
pretty(P)
```