```
>> syms x
>> f=exp(3*x)

f =

exp(3*x)

>> f1=taylor(f,x)

ans =

(81*x^5)/40 + (27*x^4)/8 + (9*x^3)/2 + (9*x^2)/2 + 3*x + 1

>> taylor(f,x,'order',7)

ans =

(81*x^6)/80 + (81*x^5)/40 + (27*x^4)/8 + (9*x^3)/2 + (9*x^2)/2 + 3*x + 1

>> taylor(f,x,'ExpansionPoint',log(2))

ans =

exp(18729444304496077/9007199254740992) + 3*exp(18729444304496077/9007199254740992)*(x -
6243314768165359/9007199254740992) + (9*exp(18729444304496077/9007199254740992)*(x -
6243314768165359/9007199254740992)^2)/2 + (9*exp(18729444304496077/9007199254740992)*(x -
6243314768165359/9007199254740992)^3)/2 + (27*exp(18729444304496077/9007199254740992)*(x
- 6243314768165359/9007199254740992)^4)/8 +
(81*exp(18729444304496077/9007199254740992)*(x -
6243314768165359/9007199254740992)^5)/40

>>
>> taylor(f,x,'Order',7,'ExpansionPoint',1)

ans =

exp(3) + 3*exp(3)*(x - 1) + (9*exp(3)*(x - 1)^2)/2 + (9*exp(3)*(x - 1)^3)/2 + (27*exp(3)*(x - 1)^4)/8 +
(81*exp(3)*(x - 1)^5)/40 + (81*exp(3)*(x - 1)^6)/80

>>
>> ezplot(f,[-2,2])
>> hold on
>> ezplot(f1,[-2,2])
>> hold off
>> int(f1,x,1,1)

ans =
```

```
0

>> a=symsum(x^k*k/factorial(k),k,1,Inf)

a =

x*exp(x)

>> a=symsum(x^k*k/3^k,k,1,Inf)

a =

piecewise([abs(x) < 3, x/(3*(x/3 - 1)^2)])

>> int(a,x,-1,1)

ans =

9/4 - log(8)

>> diff(a,x)

ans =

piecewise([abs(x) < 3, 1/(3*(x/3 - 1)^2) - (2*x)/(9*(x/3 - 1)^3)])

>>
```