```
Series[e^(x+y), {x, 0, 3}, {y, 0, 4}]
```

$$\left(1+y+\frac{y^2}{2}+\frac{y^3}{6}+\frac{y^4}{24}+O[y]^5\right)+\left(1+y+\frac{y^2}{2}+\frac{y^3}{6}+\frac{y^4}{24}+O[y]^5\right)x+$$
$$\left(\frac{1}{2}+\frac{y}{2}+\frac{y^2}{4}+\frac{y^3}{12}+\frac{y^4}{48}+O[y]^5\right)x^2+\left(\frac{1}{6}+\frac{y}{6}+\frac{y^2}{12}+\frac{y^3}{36}+\frac{y^4}{144}+O[y]^5\right)x^3+O[x]^4$$

```
ser = Sum[a[i, j] x^i y^j, {i, 0, 3}, {j, 0, 2}]
```

$$a[0,0]+y\,a[0,1]+y^2\,a[0,2]+x\,a[1,0]+x\,y\,a[1,1]+x\,y^2\,a[1,2]+$$
$$x^2\,a[2,0]+x^2\,y\,a[2,1]+x^2\,y^2\,a[2,2]+x^3\,a[3,0]+x^3\,y\,a[3,1]+x^3\,y^2\,a[3,2]$$

```
ser1 = (ser /. {x → x h, y → y h}) + O[h]^3
```

$$a[0,0]+(y\,a[0,1]+x\,a[1,0])\,h+\left(y^2\,a[0,2]+x\,y\,a[1,1]+x^2\,a[2,0]\right)h^2+O[h]^3$$

```
ser1^2
```

$$a[0,0]^2+2\,a[0,0]\,(y\,a[0,1]+x\,a[1,0])\,h+$$
$$\left((y\,a[0,1]+x\,a[1,0])^2+2\,a[0,0]\left(y^2\,a[0,2]+x\,y\,a[1,1]+x^2\,a[2,0]\right)\right)h^2+O[h]^3$$