In [1]:
```
# programe on differentailtions#
from sympy import*
x=symbols('x')
diff(2*exp(3*x),x)
```

Out[1]: $6e^{3x}$

In [2]:
```
from sympy import*
x=symbols('x')
diff(sin(3*x),x)
```

Out[2]: $3\cos(3x)$

In [4]:
```
from sympy import*
y=symbols('y')
diff(sin(3*y),y)
```

Out[4]: $3\cos(3y)$

In [5]:
```
from sympy import*
x=symbols('x')
diff(2*exp(3*x),x)
```

Out[5]: $6e^{3x}$

In [7]:
```
#product of rule#
from sympy import*
x=symbols('x')
f=(x*2*1)
g=(x*4+7*x+1)
diff(f*g)
```

Out[7]: $44x + 2$

In [8]:
```
from sympy import*
y=symbols('y')
f=(y*7*8)
g=(y*10+7*2+1)
diff(f*g)
```

Out[8]: $1120y + 840$

In [10]:
```
#u/v rule#
from sympy import*
x=symbols('x')
f=(x*4+7*5)
g=(x*3+5*8+9)
diff(f/g)
```

Out[10]:
$$\frac{4}{3x+49}-\frac{3\,(4x+35)}{(3x+49)^2}$$

In [11]:
```
#integration#
import sympy as shaguftha
x=symbols('x')
shaguftha.integrate(6*x,x)
```

Out[11]:
$$3x^2$$

In [12]:
```
import sympy as shaguftha
y=symbols('y')
shaguftha.integrate(5+6*y,y)
```

Out[12]:
$$3y^2+5y$$

In [13]:
```
import sympy as shaguftha
x=symbols('x')
shaguftha.integrate(2+3+5*x,x)
```

Out[13]:
$$\frac{5x^2}{2}+5x$$

In [16]:
```
import sympy as shaguftha
y=symbols('y')
shaguftha.integrate(3+x*1*x,x)
```

Out[16]:
$$\frac{x^3}{3}+3x$$

In [17]:
```
import sympy as shaguftha
x=symbols('x')
shaguftha.integrate(2*3*4*5*6*7*8*9*x,x)
```

Out[17]:
$$181440x^2$$

In [20]:
```
import sympy as mahek
y=symbols('y')
mahek.integrate(6*7*8*9*x*x,x)
```

Out[20]:
$$1008x^3$$

In [23]:
```
import sympy as sara
x=symbols('x')
sara.integrate(2*2*2*2*2*x*x*x*x*x,x)
```

Out[23]:
$$\frac{16x^6}{3}$$

In [25]:
```
import numpy as ayeesha
A=ayeesha.array([[1,2,3,4],[5,6,6,7],[7,8,9,0]])
print("A=",A)
```

```
A= [[1 2 3 4]
 [5 6 6 7]
 [7 8 9 0]]
```

In [26]:
```
import numpy as fiza
A=fiza.array([[1,0,1,0],[2,0,2,0],[3,0,3,0]])
print("A=",A)
```

```
A= [[1 0 1 0]
 [2 0 2 0]
 [3 0 3 0]]
```

In [ ]:
```

```