Dosya oluşturma ve okuma

Dosya oluşturma

In [1]:
```
!mkdir dosyalar
!rm -rf dosyalar/*
```

In [4]:
```
!ls dosyalar
```

```
veriler.txt
```

In [3]:
```
f = open('./dosyalar/veriler.txt', 'w')
f.close()
```

In [5]:
```
!more ./dosyalar/veriler.txt
```

Dosya içine veri yazma

In [9]:
```
f = open('./dosyalar/veriler.txt', 'w')
f.write('Bu bir .txt dosyasıdır.')
f.close()
```

In [10]:
```
!more ./dosyalar/veriler.txt
```

```
Bu bir .txt dosyasıdır.
```

In [13]:
```
f = open('./dosyalar/kareler.txt', 'w')

for i in range(1, 11):
    f.write(str(i**2)+'\n')

f.close()
```

In [14]:
```
!more ./dosyalar/kareler.txt
```

```
1
4
9
16
25
36
49
64
81
100
```

Dosyandan okuma

In [15]:
```
g = open('./dosyalar/kareler.txt', 'r')

okunanlar = g.read()

g.close()
```

In [16]:
```
okunanlar
```

Out[16]:
```
'1\n4\n9\n16\n25\n36\n49\n64\n81\n100\n'
```

In [17]:
```
print(okunanlar)
```

```
1
4
9
16
25
36
49
64
81
100
```

In [51]:
```
g = open('./dosyalar/kareler.txt', 'r')

okunanlar = g.readlines()

g.close()

print(okunanlar)

for i in okunanlar:
    print(i)
```

```
['1\n', '4\n', '9\n', '16\n', '25\n', '36\n', '49\n', '64\n', '81\n', '100\n']
1

4

9

16

25

36

49

64

81

100
```

Sembolik hesaplama kütüphanesi

polinom denklem çözme

In [23]:
```
import sympy as sym
sym.interactive.init_printing()
```

In [28]:
```
a, b, c, x = sym.symbols('a, b, c, x')
```

In [31]:
```
a,b,c,x
```

Out[31]: $(a, \quad b, \quad c, \quad x)$

In [43]:
```
eq = a*x**2 + b*x + c
print(eq)
eq
```

```
a*x**2 + b*x + c
```

Out[43]: $ax^2 + bx + c$

In [44]:
```
cozumler = sym.solve(eq, x)
print(cozumler)
cozumler
```

```
[(-b + sqrt(-4*a*c + b**2))/(2*a), -(b + sqrt(-4*a*c + b**2))/(2*a)]
```

Out[44]: $\left[\frac{1}{2a}\left(-b + \sqrt{-4ac + b^2}\right), \quad -\frac{1}{2a}\left(b + \sqrt{-4ac + b^2}\right)\right]$

In [10]:
```
sym.solve(eq, a)
```

Out[10]: $\left[-\frac{1}{x^2}(bx + c)\right]$

In [11]:
```
sym.solve(eq, b)
```

Out[11]: $\left[-ax - \frac{c}{x}\right]$

In [12]:
```
sym.solve(eq, c)
```

Out[12]: $[-x\,(ax + b)]$

integral alma

In [45]:
```
import sympy as sym
sym.interactive.init_printing()
```

In [46]:
```
x = sym.symbols('x')
```

In [48]:
```
sym.integrate(sym.sin(x), x)
```

Out[48]: $-\cos(x)$

In [17]:
```
sym.integrate(sym.tan(x), x)
```

Out[17]: $$-\frac{1}{2}\log\left(\sin^2(x)-1\right)$$

In [49]:
```
sym.integrate(1/x, x)
```

Out[49]: $$\log(x)$$

In [50]:
```
sym.integrate(sym.exp(-x**2), (x, 0, sym.oo))
```

Out[50]: $$\frac{\sqrt{\pi}}{2}$$

In [22]:
```
sym.oo
```

Out[22]: $$\infty$$

türev alma

In [51]:
```
import sympy as sym
sym.interactive.init_printing()
```

In [52]:
```
x = sym.symbols('x')
```

In [53]:
```
sym.diff(sym.sin(x), x)
```

Out[53]: $$\cos(x)$$

In [54]:
```
sym.diff(sym.tan(x), x)
```

Out[54]: $$\tan^2(x)+1$$

In [55]:
```
sym.diff(1/x, x)
```

Out[55]: $$-\frac{1}{x^2}$$

In [56]:
```
sym.diff(sym.exp(-x**2))
```

Out[56]: $$-2xe^{-x^2}$$

seriye açma

In [57]:
```
import sympy as sym
sym.interactive.init_printing()
```

In [58]:
```
theta = sym.symbols('theta')
```

In [59]:
```
sym.series(sym.sin(theta), theta)
```

Out[59]: $$\theta-\frac{\theta^3}{6}+\frac{\theta^5}{120}+\mathcal{O}\left(\theta^6\right)$$

In [62]:
```
sym.series(sym.sin(theta), theta, 1, n=12)
```

Out[62]:

$$\sin(1) + (\theta - 1)\cos(1) - \frac{1}{2}(\theta - 1)^2 \sin(1) - \frac{1}{6}(\theta - 1)^3 \cos(1) + \frac{1}{24}(\theta - 1)^4 \sin(1) + \frac{1}{120}$$
$$- \frac{1}{5040}(\theta - 1)^7 \cos(1) + \frac{1}{40320}(\theta - 1)^8 \sin(1) + \frac{1}{362880}(\theta - 1)^9 \cos(1) - \frac{1}{3628800}(\theta - 1$$
$$+ \mathcal{O}\left((\theta - 1)^{12}; \theta \to 1\right)$$

In [0]:

In [0]: