In[1]:=
```
N[Pi, 100]
```

Out[1]=
```
3.14159265358979323846264338327950288419716939937510582097494459230781640628620899⋱
 98628034825342117068
```

In[2]:=
```
N[E, 10]
```

Out[2]=
```
2.718281828
```

In[3]:=
```
Sum[1/n^2, {n, 1, Infinity}]
```

Out[3]=
$$\frac{\pi^2}{6}$$

In[4]:=
```
N[%]
```

Out[4]=
```
1.64493
```

In[5]:=
```
Prod[k^3, {k, 1, 7, 2}]
```

Out[5]=
```
Prod[k^3, {k, 1, 7, 2}]
```

In[6]:=
```
Prod[k^3, {k, 1, 7, 2}]
```

Out[6]=
```
Prod[k^3, {k, 1, 7, 2}]
```

In[7]:=
```
N[%]
```

Out[7]=
```
Prod[k^3, {k, 1., 7., 2.}]
```

In[8]:=
```
Prod[k^3, {k, 1, 7, 2}]
```

Out[8]=
```
Prod[k^3, {k, 1, 7, 2}]
```

In[9]:=
```
N[%]
```

Out[9]=
```
Prod[k^3, {k, 1., 7., 2.}]
```

```
Product[k^3, {k, 1, 7, 2}]
```

In[10]:=
```
Product[k^3, {k, 1, 7, 2}]
```

Out[10]=
```
1 157 625
```

In[11]:=
```
Integrate[1/(1 + x^2), x]
```

Out[11]=
```
ArcTan[x]
```

In[12]:=
```
Integrate[1/(1+x^2), {x, 0, 1}]
```

Out[12]=

$$\frac{\pi}{4}$$

In[13]:=
```
Limit[(1+1/n)^n, n → Infinity]
```

Out[13]=

$$e$$

In[14]:=
```
Factor[x^3+y^3]
```

Out[14]=

$$(x+y)\left(x^2-x\,y+y^2\right)$$

In[15]:=
```
Expand[(x+y)(x^2-x y+y^2)]
```

Out[15]=

$$x^3+y^3$$

In[16]:=
```
Series[x Cot[x], {x, 0, 9}]
```

Out[16]=

$$1-\frac{x^2}{3}-\frac{x^4}{45}-\frac{2\,x^6}{945}-\frac{x^8}{4725}+O[x]^{10}$$

In[17]:=
```
Solve[{x+y==3, x-3 y==7}, {x, y}]
```

Out[17]=

$$\{\{x\to 4,\ y\to -1\}\}$$

In[18]:=
$$\begin{pmatrix}1&2&3\\4&5&6\\0&0&1\end{pmatrix}$$

Out[18]=

$$\{\{1,\ 2,\ 3\},\{4,\ 5,\ 6\},\{0,\ 0,\ 1\}\}$$

In[19]:=
$$A=\begin{pmatrix}1&2&3\\4&5&6\\0&0&1\end{pmatrix};$$
```
Det[A]
B = Inverse[A]
```

Out[20]=

$$-3$$

Out[21]=

$$\left\{\left\{-\frac{5}{3},\ \frac{2}{3},\ 1\right\},\left\{\frac{4}{3},\ -\frac{1}{3},\ -2\right\},\{0,\ 0,\ 1\}\right\}$$

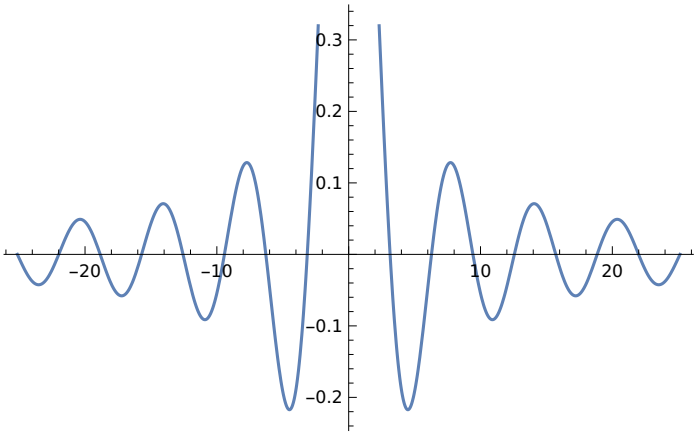
In[22]:=
```
MatrixForm[B]
```

Out[22]//MatrixForm=

$$\begin{pmatrix} -\frac{5}{3} & \frac{2}{3} & 1 \\ \frac{4}{3} & -\frac{1}{3} & -2 \\ 0 & 0 & 1 \end{pmatrix}$$

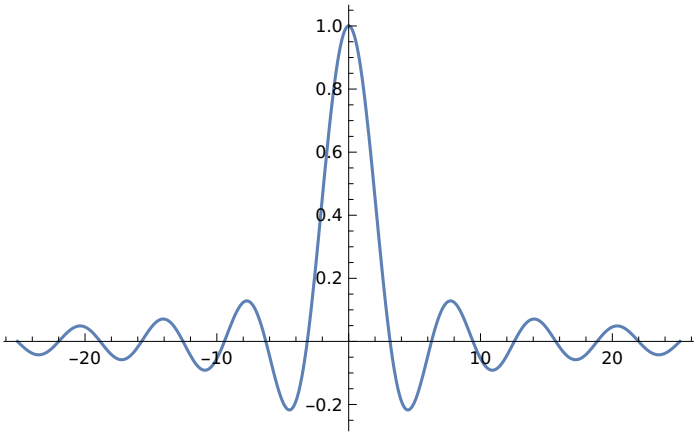
In[23]:=
```
f[x_] := Sin[x] / x;
Plot[f[x], {x, -8 Pi, 8 Pi}]
```

Out[24]=



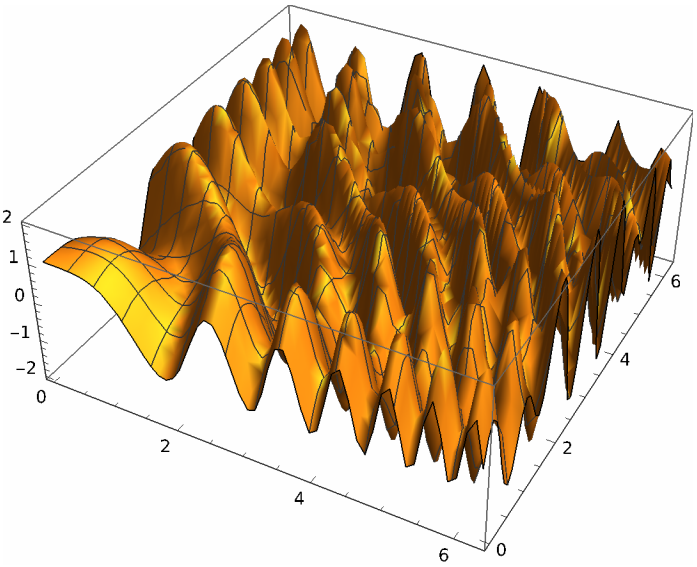
In[25]:=
```
Plot[f[x], {x, -8 Pi, 8 Pi}, PlotRange → All]
```

Out[25]=



In[26]:=
```
h[x_, y_] := Sin[x * y] + Cos[x ^ 2 + y ^ 2];
Plot3D[h[x, y], {x, 0, 2 Pi}, {y, 0, 2 Pi}]
```

Out[27]=



In[28]:=
```
(* упражнение *)
```

In[29]:=
```
x = 0
Do[x = x + k, {k, 1, 99, 2}]
x
```

Out[29]=
```
0
```

Out[31]=
```
2500
```

In[32]:=
```
x = 0
k = 2
While[k < 102, x = x + k; k = k + 2]
```

Out[32]=
```
0
```

Out[33]=
```
2
```

In[35]:=
```
x = 0
k = 2
While[k < 102, x = x + k; k = k + 2]
x
```

Out[35]=
```
0
```

Out[36]=
```
2
```

Out[38]=
```
2550
```