

Labolatorium 1

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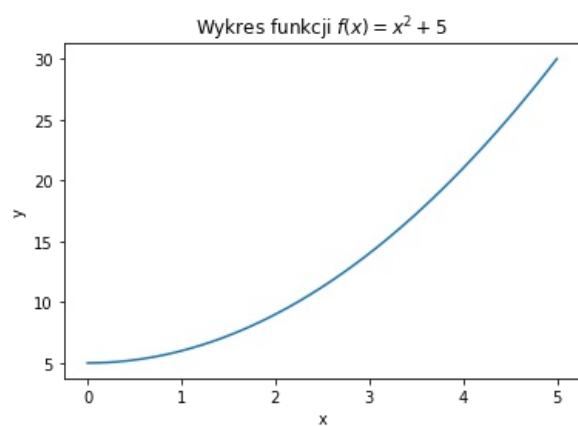
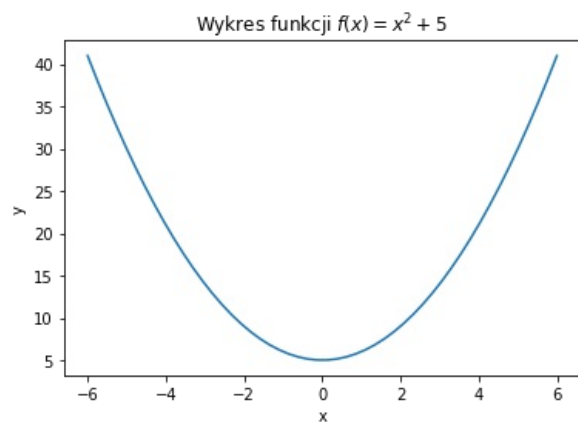
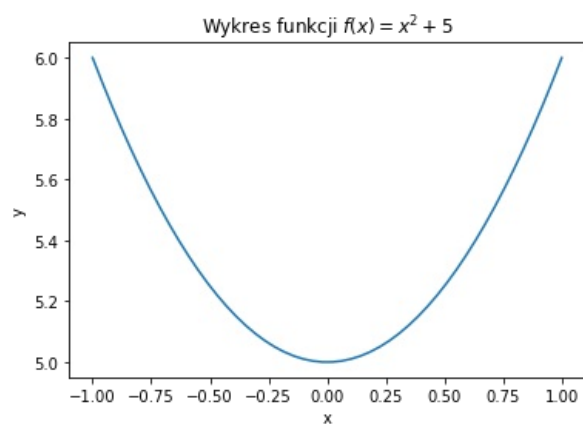
Zadanie 3

```
In [25]: import matplotlib
import matplotlib.pyplot as plt
import numpy as np

def fun(x):
    return x**2 + 5

x1 = np.linspace(-1, 1)
x2 = np.linspace(-6, 6)
x3 = np.linspace(0, 5)

for i in [x1, x2, x3]:
    plt.figure()
    plt.plot(i, fun(i))
    plt.title("Wykres funkcji  $f(x)=x^2+5$ ")
    plt.xlabel("x")
    plt.ylabel("y")
    plt.show
```



Zadanie 4

1) Utworzenie *dataframe*:

```
In [37]: import pandas as pd

d = {'name': ["Jan", "Aleksandra", "Barłomiej", "Dominik", "Maria"], 'surname': ["Kowalski", "Lis", "Więcek", "Czyżyk"], 'age': [20, 21, 22, 23, 24], 'sex': ["M", "K", "M", "M", "K"]}
df = pd.DataFrame(data=d)
df
```

```
Out[37]:
```

	name	surname	age	sex
0	Jan	Kowalski	20	M
1	Aleksandra	Lis	21	K
2	Barłomiej	Więcek	22	M
3	Dominik	Czyżyk	23	M
4	Maria	Nowak	24	K

2) Informacje o danych:

```
In [39]: df.info(verbose=True)

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5 entries, 0 to 4
Data columns (total 4 columns):
#   Column      Non-Null Count  Dtype
---  -
0   name        5 non-null      object
1   surname     5 non-null      object
2   age         5 non-null      int64
3   sex         5 non-null      object
dtypes: int64(1), object(3)
memory usage: 288.0+ bytes
```

3) Opis danych:

```
In [40]: df.describe()
```

```
Out[40]:
```

	age
count	5.000000
mean	22.000000
std	1.581139
min	20.000000
25%	21.000000
50%	22.000000
75%	23.000000
max	24.000000

4) Trzy pierwsze rekordy:

```
In [42]: df.head(3)
```

```
Out[42]:
```

	name	surname	age	sex
0	Jan	Kowalski	20	M
1	Aleksandra	Lis	21	K
2	Barłomiej	Więcek	22	M

```
In [ ]:
```