a.

b.

Notatki wstępne z zajęć

```
a = 12
A = "poniedziałek"
b = "poniedziałek"
c = "12"
```

```
a=100
```

```
a,A,a,b,c
```

```
(100, 'poniedziałek', 100, 'poniedziałek', '12')
```

```
print(a,end='')
print(b)
print(c)
```

```
100poniedziałek
12
```

```
type(a),type(A),type(b),type(c)
```

```
(int, str, str, str)
```

```
a,A,C = 12, "poniedziałek","12"
```

Zadanie 1

```
b = 11.0
B = "Ala ma koty"
zm1 = 12
zm2 = 4
Zm3 = "5"
```

Zadanie 2

```
type(b),type(B),type(zm1),type(zm2),type(Zm3)
```

```
(float, str, int, int, str)
```

Zadanie 3

```
b,B,zm1,zm2,Zm3 = 11.0,"Ala ma koty",12,4,"5"
```

Zadanie 4

a.

```
zm1+zm2
```

```
16
```

b.

```
B+" i psa"
```

```
'Ala ma koty i psa'
```

c.

```
b%zm2
```

```
3.0
```

d.

```
b*zm1
```

```
132.0
```

e.

```
b**zm1
```

```
3138428376721.0
```

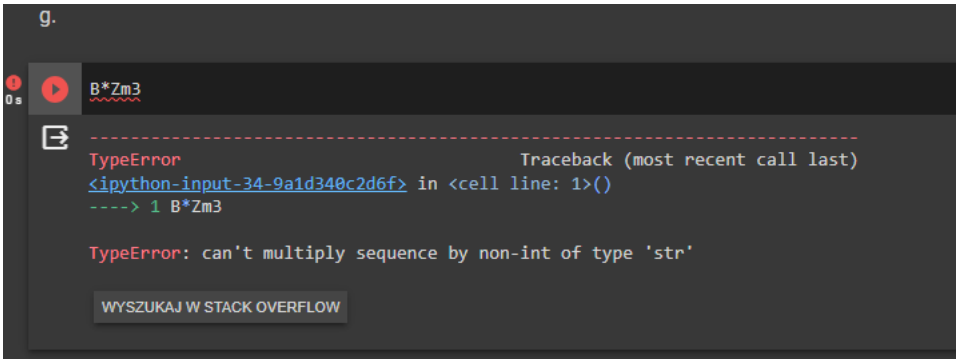
f.

```
B*zm1
```

```
'Ala ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma kot
```

g.

```
#B*Zm3
#nie działa, gdyż nie można mnożyć stringa (zmienna B) przez inta (zmiena Zm3)
```



Zadanie 5

a.

```
len(B)
```

```
11
```

b.

```
B[0]
```

```
'A'
```

c.

```
B[1]
```

```
'1'
```

d.

```
B[3:6]
```

```
' ma'
```

e.

```
B[3:]
```

```
' ma koty'
```

f.

```
B[:6]
```

```
'Ala ma'
```

g.

```
B[-2]
```

```
't'
```

Zadanie 6

a.

```
B*int(Zm3)
```

```
'Ala ma kotyAla ma kotyAla ma kotyAla ma kotyAla ma koty'
```

b.

```
type(str(3))
```

```
str
```

Zadanie 7

```
Bnew = B[0:7]
```

```
Bnew=Bnew+str(3)
```

```
print(Bnew)
```

```
Ala ma 3
```

```
Bnew+B[6:]
```

```
'Ala ma 3 koty'
```

Zadanie 8

```
B[0:7]+str(3)+B[6:]
```

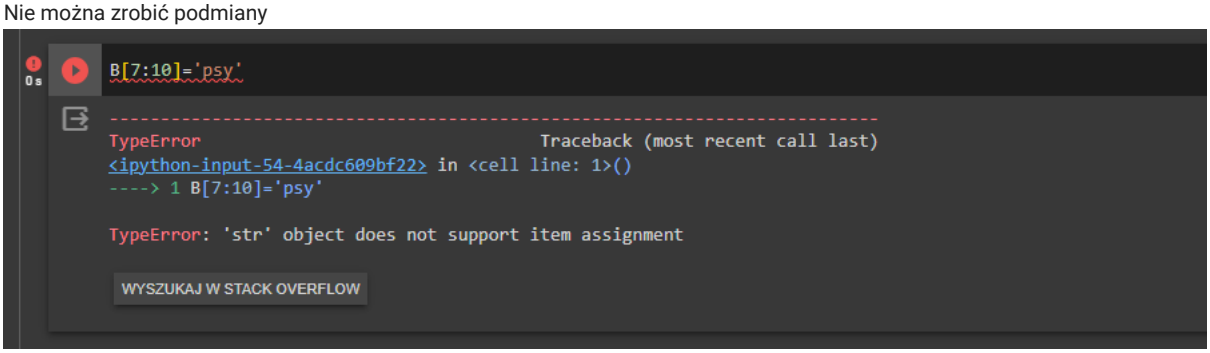
```
'Ala ma 3 koty'
```

```
B[7:10]
```

```
'kot'
```

```
#B[7:10]='psy'
```

Nie można zrobić podmiany



Zadanie 9

```
x = input("Wprowadz wartość: ")
```

```
Wprowadz wartość: xd
```

```
print(x)
```

```
xd
```

```
type(x)
```

```
str
```

Zadanie 10

```
x= int(input("Liczba: "))
if x>0:
  print("Liczba > 0")
elif x==0:
  print("Liczba = 0")
else:
  print("Liczba < 0")
```

```
Liczba: 1
Liczba > 0
```

Zadanie 11

```
wa=int(input("Wspolczynnik a: "))
wb=int(input("Wspolczynnik b: "))
wc=int(input("Wspolczynnik c: "))
delta= wb*wb-4*wa*wc
print(delta)
if delta>0:
  print("Dwa rozwiazania")
elif delta==0:
  print("Jedno rozwiazanie")
```

```
else:
  print("Brak rozwiazan")
```

```
    Wspolczynnik a: 2
    Wspolczynnik b: 2
    Wspolczynnik c: 2
    -12
    Brak rozwiazan
```

```
import math
wa=int(input("Wspolczynnik a: "))
wb=int(input("Wspolczynnik b: "))
wc=int(input("Wspolczynnik c: "))
if a!=0:
  delta= wb*wb-4*wa*wc
  print("Delta")
  print(delta)
  if delta>0:
    print("Dwa rozwiazania")
    print((-wb-math.sqrt(delta))/(2*wa))
    print((-wb+math.sqrt(delta))/(2*wa))
  elif delta==0:
    print("Jedno rozwiazanie")
    print((-wb)/(2*wa))
  else:
    print("Brak rozwiazan")
else:
  print("Rowanie liniowe jedno rozwiazanie")
  if wb!=0:
    print((-wb)/(wc))
  else:
    if wc==0:
      print("oo rozwiazan")
    else:
      print("rownanie sorzeczne")
```

```
    Wspolczynnik a: 2
    Wspolczynnik b: 2
    Wspolczynnik c: 2
    Delta
    -12
    Brak rozwiazan
```

Zadanie 12

```
test = [b,B,zm1,zm2,Zm3]
```

```
len(test),test[0],test[1],test[3:6],test[3:],test[:6],test[-2]
```

```
(5,
 11.0,
 'Ala ma koty',
 [4, '5'],
 [4, '5'],
 [11.0, 'Ala ma koty', 12, 4, '5'],
 4)
```

Zadanie 13

```
test.append(121)
```

Zadanie 14

```
test2 = test + [1,2,3]
```

```
test2
```

```
[11.0, 'Ala ma koty', 12, 4, '5', 121, 1, 2, 3]
```

Zadanie 15

```
test2[0] = "Lodz"
```

```
test2[6] = 77
```

```
test2
```

```
['Lodz', 'Ala ma koty', 12, 4, '5', 121, 77, 2, 3]
```

Zadanie 16

```
12 in test2
```

```
True
```

```
100 in test2
```

```
False
```

Zadanie 17

```
for i in range(0,9,1):
  print(i)
```

```
0
1
2
3
4
5
6
7
8
```

Zadanie 18

```
for i in range(0,13,3):
  print(i)
```

```
0
3
6
9
12
```

Zadanie 19

```
for i in range(-9,1,2):
  print(i)
```

```
-9
-7
-5
-3
-1
```

Zadanie 20

```
lista2=[1,4,-6,10,11,15,20]
```

```
suma = 0
for i in lista2:
  #print(i)
  #print(suma)
  suma=suma+int(i)
```

```
print("Suma elementow",suma)
```

```
Suma elementow 55
```

```
sum(lista2)
```

```
55
```

Zadanie 21

```
lista3 = [1,4,-6,10,11,15,20]
```

```
maximum= lista3[0]
for i in range(0,len(lista3)):

  #print(suma)
  if maximum<lista3[i]:
    maximum = lista3[i]
```

```
print("Max",maximum)
```

```
Max 20
```

```
#del(max)
```

```
max(lista3)
```

```
20
```

Zadanie 22

```
list4 = []
maximum = float('-inf')
for i in range(0,10):

  list4.append(int(input("Write "+str(i)+" number:")))
  if maximum<list4[i]:
    maximum = list4[i]

  #print(suma)

print("Max",maximum)
```

```
Write 0 number:-3
Write 1 number:4
Write 2 number:23
Write 3 number:2137
Write 4 number:23
Write 5 number:12
Write 6 number:42
Write 7 number:12
Write 8 number:42
Write 9 number:65
Max 2137
```

```
print("Max",max(list4))
```

```
Max 2137
```

Alternatywny sposób

```
list4 = [int(input("Write "+str(i)+" number:")) for i in range(10)]
maximum = max(list4)
print("Max", maximum)
```

Zadanie 23

```
list4 = []
i = 0
maximum = float('-inf')

while i < 10:
    num = int(input("Write "+str(i)+" number:"))
    list4.append(num)
    if num > maximum:
        maximum = num
    i += 1

print("Max", maximum)
```

```
 Write 0 number:5
 Write 1 number:-5
 Write 2 number:23
 Write 3 number:2137
 Write 4 number:88
 Write 5 number:43
 Write 6 number:1111
 Write 7 number:33
 Write 8 number:22
 Write 9 number:1
 Max 2137
```

Zadanie 24

```
a = int(input("Write a "))
b = int(input("Write b "))
potega=1
i=0
while i<abs(b):
    if b>0:
      potega*=a
      i=i+1
    else:
      potega*=1.0/a
      i=i+1

print("potega", potega)
```

```
 Write a 3
 Write b 4
 potega 81
```

Zadanie 25

```
def potega(a,b):
  potega=1
  i=0
  while i<abs(b):
    if b>0:
      potega*=a
      i=i+1
    else:
      potega*=1.0/a
      i=i+1
  return potega


potega(2,3)
```

```
 8
```

```
potega(2,-8)
```

```
 0.00390625
```

Zadanie 26

```
numbers = [55, 4, 92, 1, 104, 64, 73, 99, 20]
```

```
def sum(a):
  suma=0
  for i in a:

    suma=suma+int(i)
  return(suma)


sum(numbers)
```

```
512
```

Zadanie 27

```
def max(a):
  max_value = None
  for num in a:
      if (max_value is None or num > max_value):
          max_value = num
  return(max_value)


def info_lista(a):
 return max(a),sum(a)


info_lista(numbers)
```

```
(104, 512)
```