

Wydział: Elektryczny
Kierunek: Elektromobilność
Semestr: II
Data: 17.03.2022

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Sprawozdanie: I

%Zadanie 1_1

```
A = [2 -7; 5 4];  
B = [6 1; 4 -3];  
f = [4 1];
```

[Command line]:

(puste z racji obecności średników)

%Zadanie 1_2

```
size(A)  
size(f)
```

```
Bt = B';
```

```
a1 = (A+B)^2;  
a2 = 2*(A-B);  
sum1 = a1+a2;
```

```
C = [A B];  
h = [f f];
```

```
Ch = C * h';
```

[Command line]:

```
ans =  
     2     2
```

```
ans =  
     1     2
```

```
%Zadanie 1_3  
who  
save dane;  
clear;  
ls
```

[Command line]:

Your variables are:

A	Bt	Ch	a1	ans	e2	f	f2	g1	g3	sum1	z
B	C	Y	a2	e1	e3	f1	f3	g2	h	x	

```
%Zadanie 1_4
```

```
x = 1:24;
```

```
Y = reshape(x,6,4);
```

```
%Zadanie 1_5
```

```
e1 = exp(2*sin(2*pi));  
e2 = (cos(pi/3))^4;  
e3 = log(sqrt(5));
```

```
%Zadanie 1_6
```

```
z = complex(3,-2);  
f1 = abs(z);
```

```
f2 = angle(z);  
f3 = conj(z);
```

```
%Zadanie 1_7
```

```
g1 = ones(3,4);  
g2 = zeros (3,4);  
g3 = rand(3,4);
```

```
%Zadanie 2_1
```

```
for i = 1:6  
    for j = 1:6  
        if i ~= j  
            A(i,j) = 1/(i-j);  
        else i = j;  
            A(i,j) = 0;  
        end  
    end  
end  
A;
```

```
%Zadanie 2_2
```

```
b1 = rand([10,10]);  
for i = 1:10  
    for j = 1:10  
        if b1(i,j) > 0.2 && b1(i,j) < 0.5  
            disp(b1(i,j));  
        end  
    end  
end
```

```
[Command line]:
```

0.4845

0.3427

0.4001

0.2866

0.4465

0.2850

0.3900

0.3757

0.4170

0.4979

0.2068

0.3723

0.4385

0.3958

0.4073

0.4378

0.3981

0.4067

0.3889

0.4504

0.2753

0.3242

0.4547

0.2057

0.3260

0.3017

0.3725

0.2467

0.2834

0.4564

0.3249

0.2462

%Zadanie 2_3

%Skrypt ten jest skrytem testowym a = input('a :');
%Obliczane jest wyrażenie $\sin(a)\cos(b)$
%gdzie a, b – dwie wczytane liczby

```
a = input('a :');  
b = input('b :');  
disp(sin(a) * cos(b));  
help Zadanie_2_3.m
```

[Command line]:

```
a :4  
b :5  
-0.2147
```

Skrypt ten jest skrytem testowym a = input('a :');
Obliczane jest wyrażenie $\sin(a)\cos(b)$
gdzie a, b – dwie wczytane liczby

%Zadanie 2_4

```
n = input("Podaj rozmiar macierzy: ");
```

```
A = rand(n)  
B = rand(n)
```

```
inv(A)  
B';  
A+B;
```

```
A-B;  
A*B;  
x = input('Wprowadź liczbę przemnożenia macierzy: ');  
M = A*x
```

```
[Command line]:  
Podaj rozmiar macierzy: 4
```

A =

0.0977	0.1432	0.8487	0.2714
0.9081	0.5594	0.9168	0.1008
0.1080	0.0046	0.9870	0.5078
0.5170	0.7667	0.5051	0.5856

B =

0.7629	0.1710	0.9419	0.5326
0.0830	0.9386	0.6559	0.5539
0.6616	0.5905	0.4519	0.6801
0.5170	0.4406	0.8397	0.3672

ans =

-3.9382	1.4559	2.2081	-0.3401
3.6837	-0.6605	-3.1258	1.1171
1.9895	0.1082	-0.5693	-0.4470
-3.0621	-0.5139	2.6340	0.9310

Wprowadź liczbę przemnożenia macierzy: 5

M =

0.4885	0.7158	4.2435	1.3571
4.5403	2.7969	4.5841	0.5038
0.5401	0.0229	4.9348	2.5392
2.5850	3.8334	2.5257	2.9280

%Zadanie 2_5

```
tic();  
for i = -10:0.001:10  
    y = cos(i);  
end  
a = toc();  
range = -10:0.001:10;
```

```
tic();  
cos(range);
```

```
b = toc();
```

```
display(a);  
display(b);
```

[Command line]:

a =

4.0800e-04

b =

2.2500e-04

%Zadanie 2_6


```
function [v] = metrs(speed)
v = speed / 3.6;
End
```

[Command line]:

Brak – jest to funkcja której brak argumentów

%Zadanie 3_1

```
vect = rand(1,50);
file = fopen('dane.bin','w');
fwrite(file, vect, 'float');
fclose(file);
```

%Zadanie 3_2

```
t =[4 5];
file = fopen("dane.bin","r");
fread(file, t, 'float')
fclose(file);
```

[Command line]:

ans =

0.2393	0.1126	0.8334	0.1403	0.2573
0.5789	0.4438	0.4036	0.2601	0.2976
0.8669	0.3002	0.3902	0.0868	0.4249
0.4068	0.4014	0.3604	0.4294	0.1192

%Zadanie 3_3

```
C = 0;
Tc = 0:20:300;
Tf = 9 * Tc / 5 + 32;
file = fopen("temperatura.txt", "w+");
fprintf(file, '%4d ', Tc);
fprintf(file, '\n');
```

```
fprintf(file, '%4d ', Tf);  
fclose(file);
```

[Command line]:
(Utworzono plik tekstowy)

%Zadanie 3_4

```
file = fopen("temperatura.txt", "r");  
read = fscanf(file, '%d');  
fclose(file);  
read = reshape(read , 1, size(read, 1));  
disp(read);
```

[Command line]:
(Wczytano plik tekstowy)

Columns 1 through 19

0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	32	68
---	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----	----

104

Columns 20 through 32

140	176	212	248	284	320	356	392	428	464	500	536	572
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