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## Table of Contents

.....	1
Question 1a .....	1
Question 1b .....	1
Question 2 .....	2
Question 3 .....	3
Question 4 .....	4
Question 5 .....	4

```
% Brandon Ramirez Lopez
% ME 203
% Homework 4
```

## Question 1a

```
A=[3 5 -4;-8 -1 33;-17 6 -9]
for i=1:size(A)
    for j=1:size(A)
        if A(i,j)>=1
            B(i,j)=log(A(i,j));
        elseif A(i,j)<=-1
            B(i,j)=A(i,j)+20;
        end
    end
end
B

A =
     3     5    -4
    -8    -1    33
   -17     6    -9

B =
    1.0986    1.6094   16.0000
   12.0000   19.0000    3.4965
    3.0000    1.7918   11.0000
```

## Question 1b

```
A=[3 5 -4;-8 -1 33;-17 6 -9]
x=(A>=1);
B1=log(A(x))
y=(A<=-1);
B2=A(y)+20

A =
     3     5    -4
    -8    -1    33
```

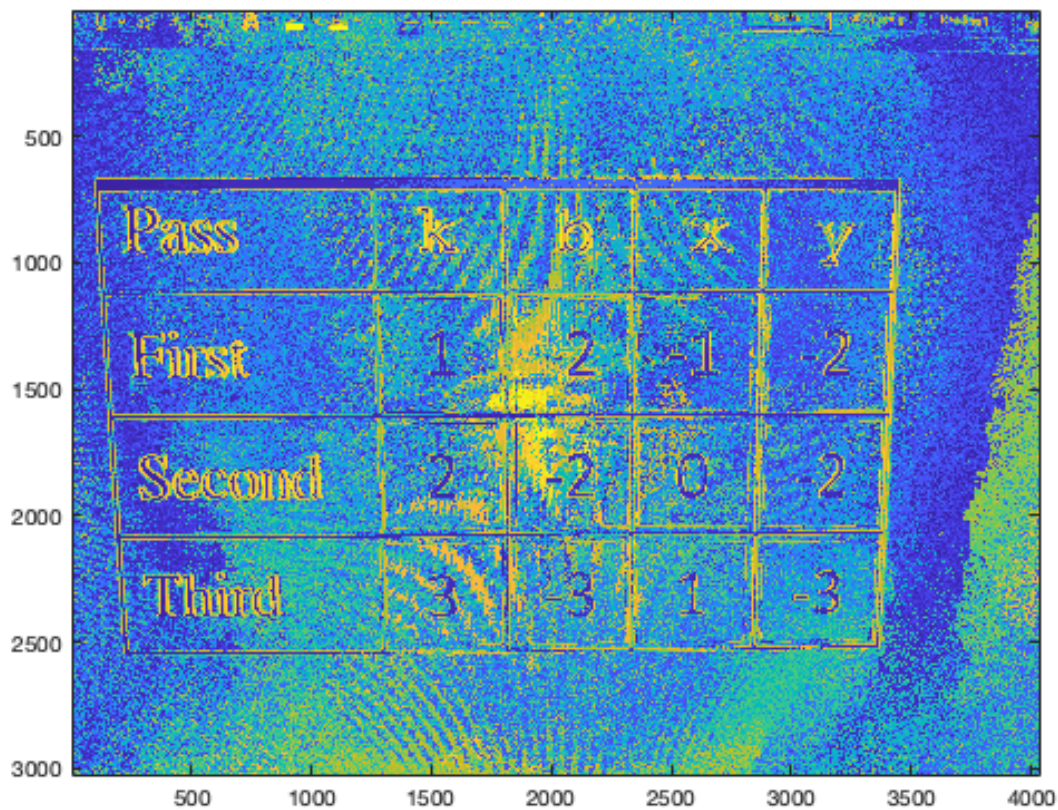
---

```
      -17      6      -9
B1 =
      1.0986
      1.6094
      1.7918
      3.4965
B2 =
      12
       3
      19
      16
      11
```

## Question 2

```
k = 1; b = -2; x = -1; y = -2;
while k <= 3 k,
b, x, y
y = x^2 - 3;
if y < b
b = y;
end
x = x + 1;
k = k + 1;
end
img=imread('Table.png');
image(img)
```

```
k =
     1
b =
    -2
x =
    -1
y =
    -2
k =
     2
b =
    -2
x =
     0
y =
    -2
k =
     3
b =
    -3
x =
     1
y =
    -3
```



## Question 3

```

W=25
M='wood on wood'
switch M
    case 'wood on wood'
        M=.35;
    case 'metal on metal'
        M=.2;
    case 'metal on wood'
        M=.4;
    case 'Rubber on concrete'
        M=.7;
    otherwise
        disp('unknown')
end
F=W*M

W =
    25
M =
    'wood on wood'
F =

```

---

8.7500

## Question 4

```
x1=-2
y1=-20
x2=0
y2=4
x3=2
y3=68
x4=4
y4=508
x=[-2 0 2 4];
y=[-20 4 68 508];
a=polyfit(x,y,3)

x1 =
    -2
y1 =
   -20
x2 =
     0
y2 =
     4
x3 =
     2
y3 =
    68
x4 =
     4
y4 =
   508
a =
    7.0000    5.0000   -6.0000    4.0000
```

## Question 5

```
t=0:.01:4;
x=5*t-10;
y=25.*t.^2-120.*t+144;
D=sqrt(x.^2+y.^2);
for i=1:length(t)
    if D(i)<min
        min=D(i)
        tmin=t(i)
    end
end
min
tmin

min =
    1.3581
tmin =
```

---

2.2300

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