ASSIGNMENT

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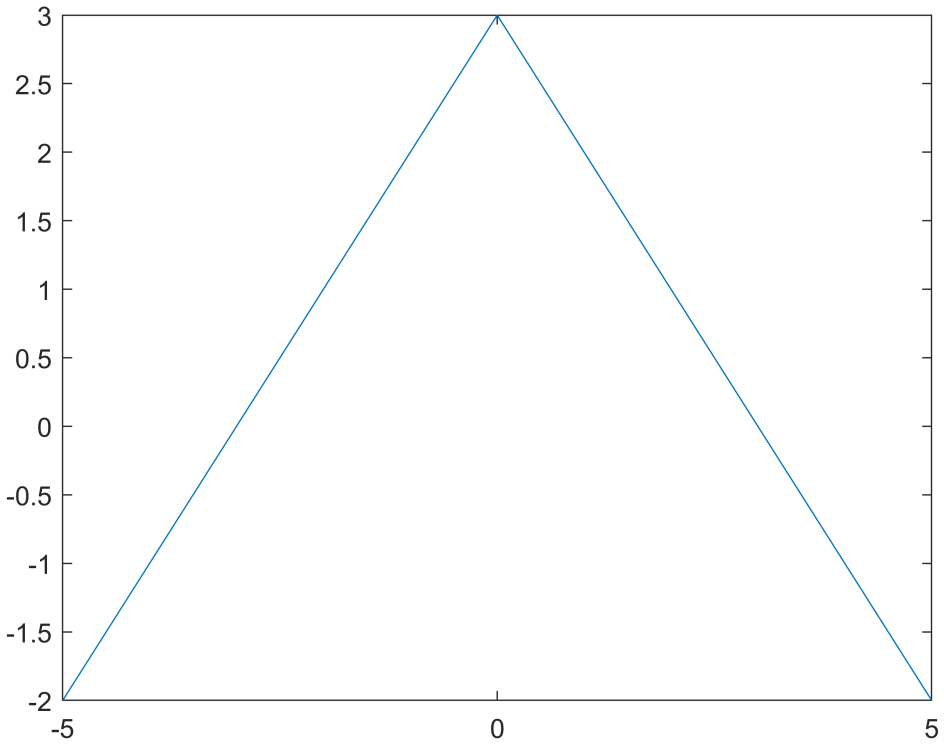
Course: BSc Computer Engineering

QUESTION 11

```
syms x
y11 = piecewise(x < 0, x + 3, x >= 0, -x + 3);
y = limit(y11)
```

```
y = 3
```

```
fplot(y11)
```



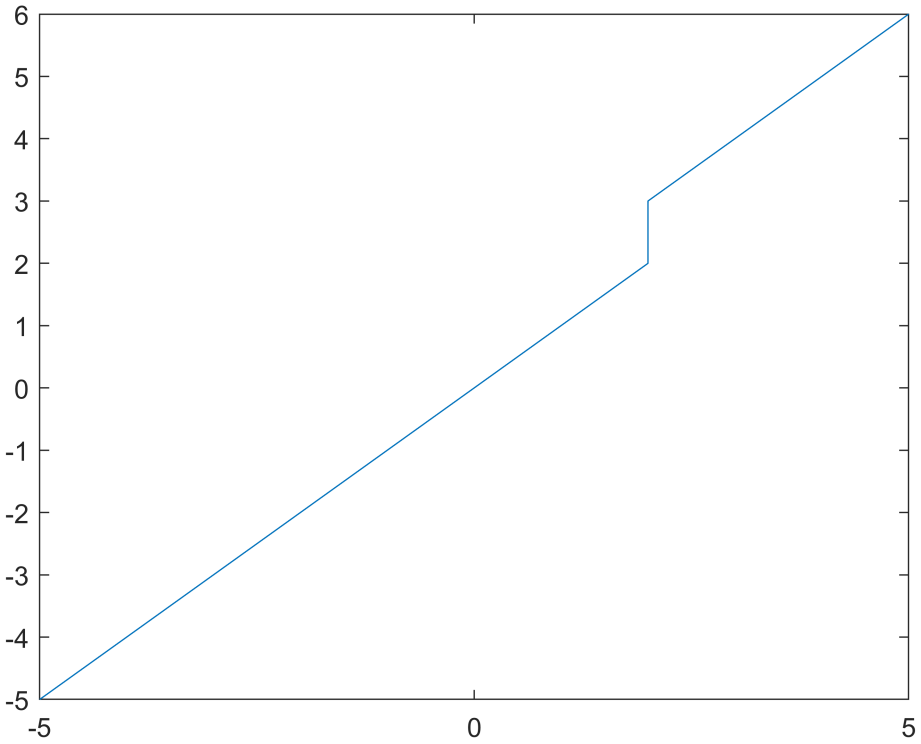
QUESTION 12

```
syms x
y12 = piecewise(x < 2, x, x >= 2, x + 1);
y = limit(y12, 2)
```

y =

$$\lim_{x \to 2} \begin{cases} x & \text{if } x < 2 \\ x + 1 & \text{if } 2 < x \wedge \neg x < 2 \end{cases}$$

```
fplot(y12)
```

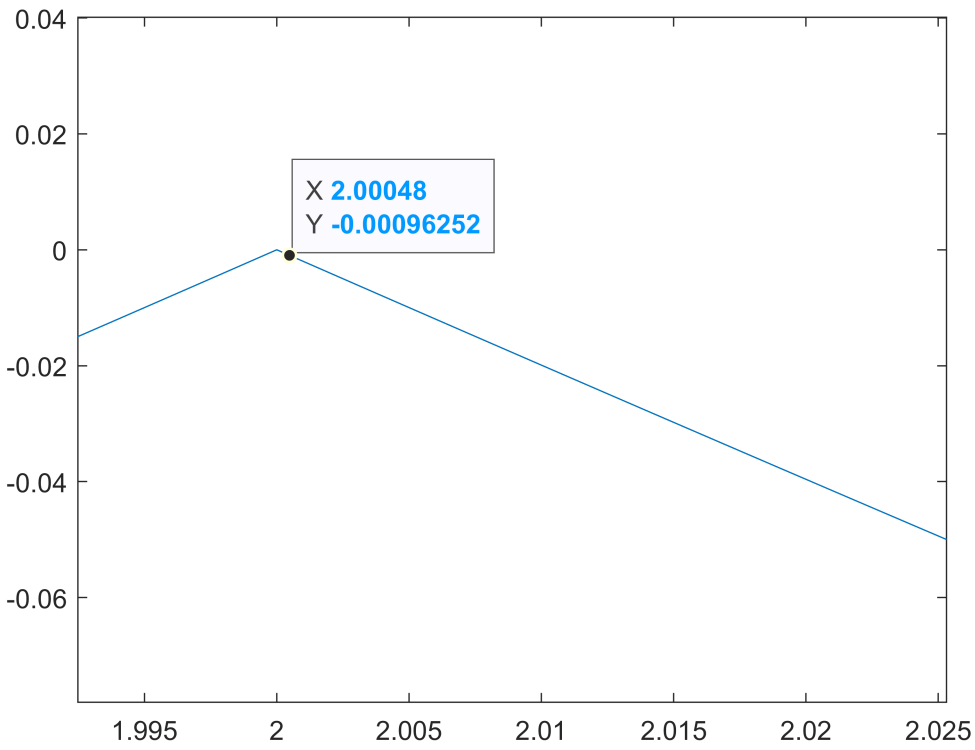


QUESTION 13

```
syms x
y13 = piecewise(x < 2, x^2 - 2*x,x >= 2, x^2 - 6*x + 8);
y = limit(y13, 2)
```

y = 0

```
%since f(2)=1 and limf(x)=0 ,the limit exists but is discontinuous
%                 x->2
fplot(y13)
```


0.04
0.02
0
-0.02
-0.04
-0.06
1.995
2
2.005
2.01
2.015
2.02
2.025
X 2.00048
Y -0.00096252