P01 Report

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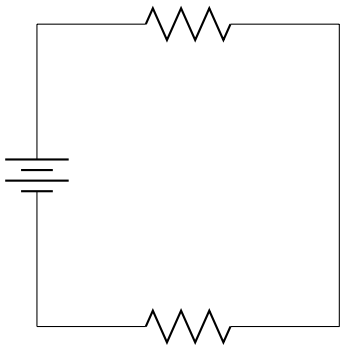
Chapter 1

Theoretical part

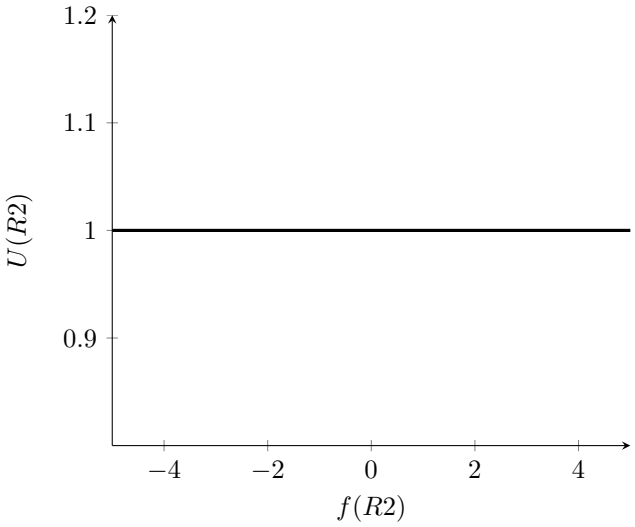


Electrical Circuit Diagram

1.1 Circuit Calculation

Theoretical calculation of the circuit V1=12.5V R1=3ohm R2=6ohm VR = (R x VT) / RT VR1= (R1 x V1) / RT = 12.5 V VR2= (R2 x V2)/ RT = 8.333 V

V1	12.5V
R1	3ohm
R2	6ohm
UR1	12.5V
UR2	8.33V


1.2
1.1
1
0.9
$U(R2)$
−4
−2
0
2
4
$f(R2)$

Chapter 2

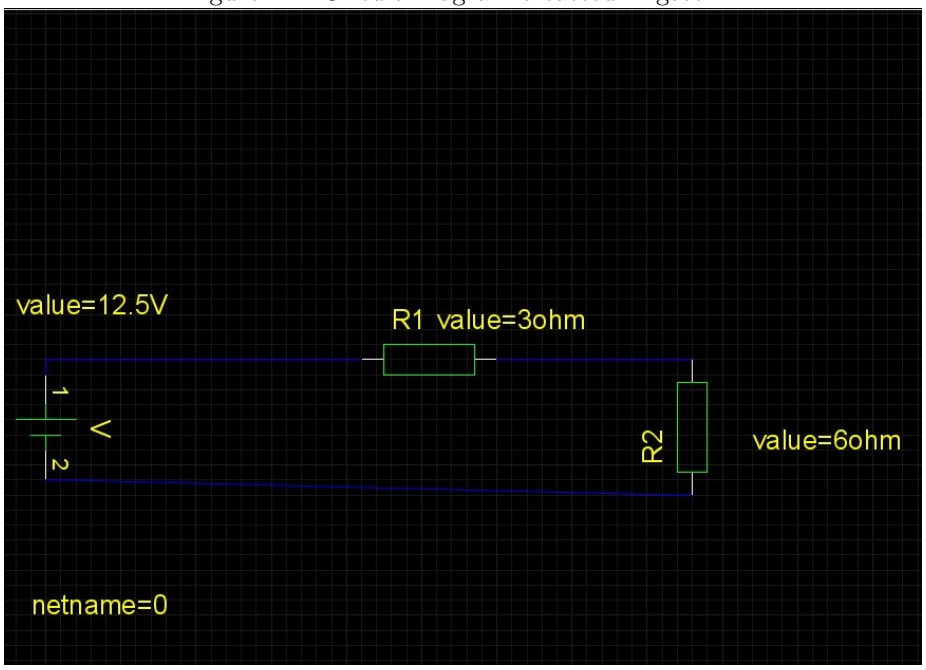
Practical part

Practical Calculation

2.1 Work with GEDA programs'

2.1.1 'Work with gschem'

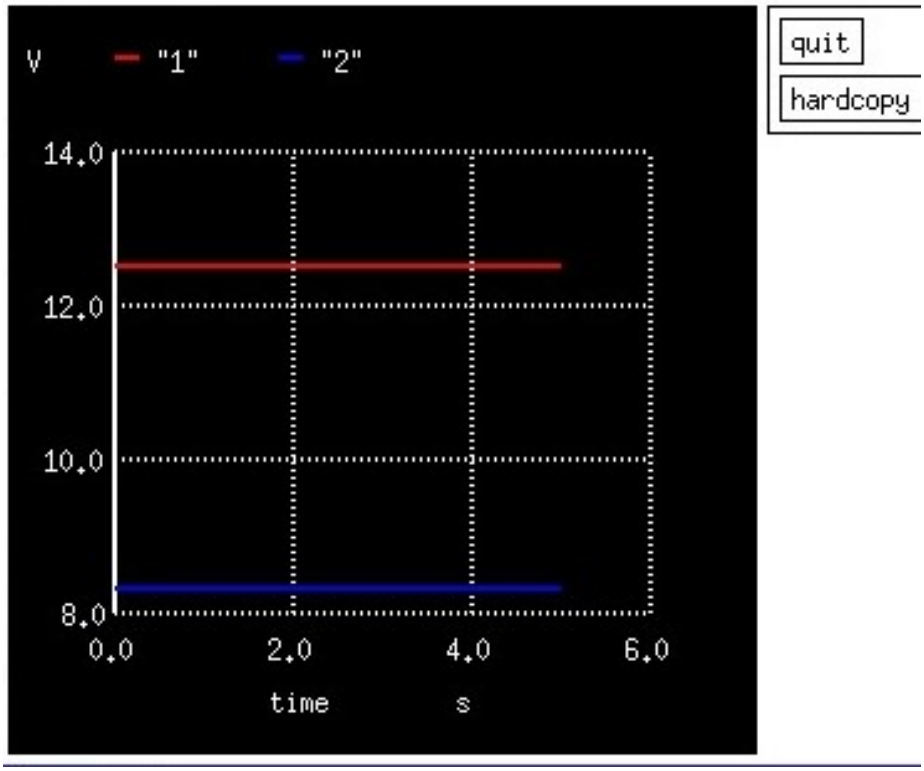
Figure 2.1: Circuit Diagram createed in gscehm



2.1.2 'Work with gnetlist'

2.1.3 'Work with ngspice'

Figure 2.2: The plotted graph after using ngspice



2.2 Work with QUCS programs'

Image of Schematics

DC simulation

Curve and Table obtained from DC Simulation

Figure 2.3: Circuit Diagram in QUCS

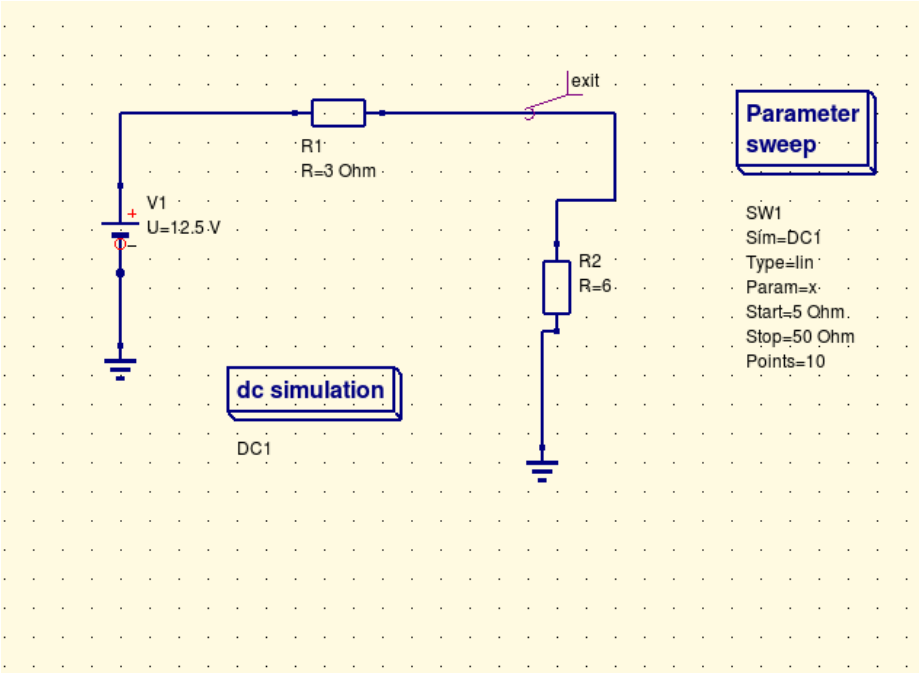


Figure 2.4: DC Simulation

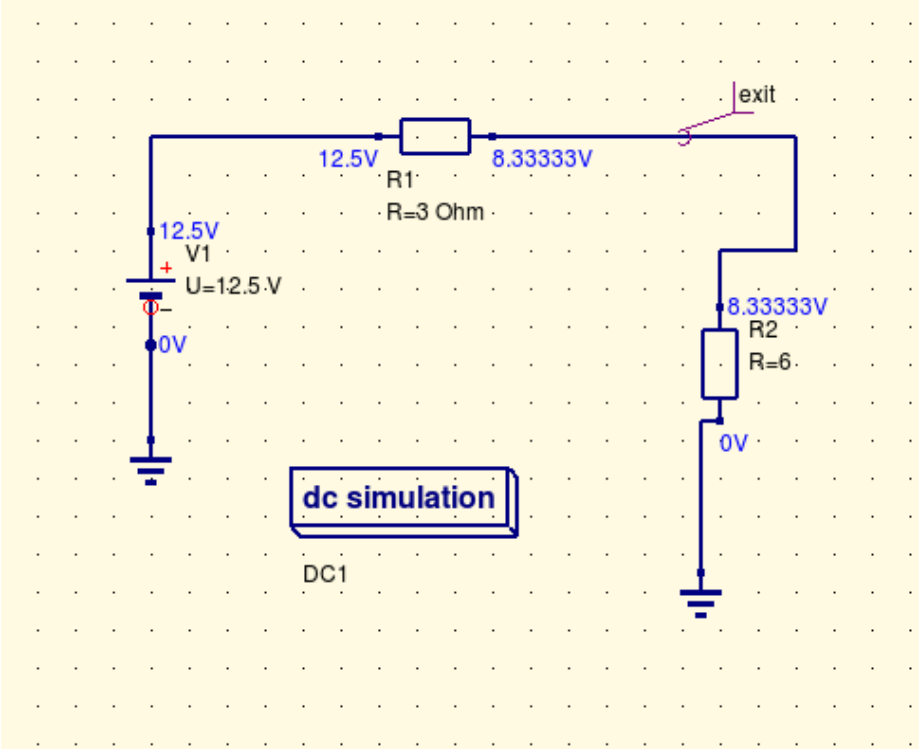
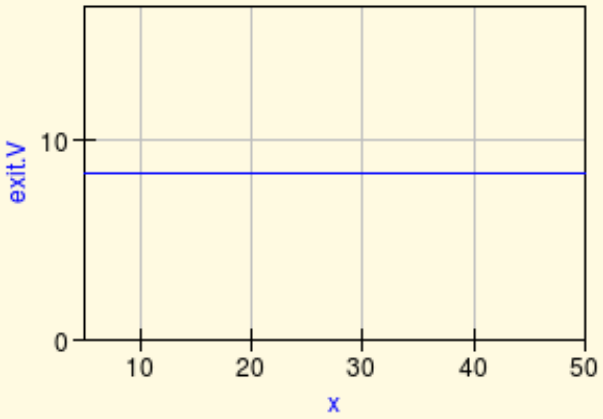
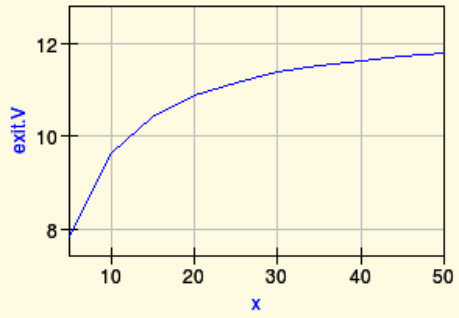


Figure 2.5: The following graph shows the DC simulation for the various obtained values



x	V1.I	x
5	-1.39	
10	-1.39	
15	-1.39	
20	-1.39	
25	-1.39	
30	-1.39	
35	-1.39	
40	-1.39	
45	-1.39	
50	-1.39	

Figure 2.6: The following graph shows the Sweep Simulation for the various obtained values



Equation

UR2=f(R2)

x	V1.I
5	-1.56
10	-0.962
15	-0.694
20	-0.543
25	-0.446
30	-0.379
35	-0.329
40	-0.291
45	-0.26
50	-0.236