

LADDER

Run

0-System, 1-Stand, 2-Fix, 3-Sci, 4-Eng 13:11

Format= 4 Digit= 4 Angle= 2

Enter a value for Format.

Edit [] [] [] Cancel OK

I have the screen above set to ENG = 4, Digit = 0.0000, and Angle = 2 for Degrees.
If that is acceptable to you press [Enter].

Ladder 13:13

Enter Es in M2 Matrix

LADDER

[] [] [] [] [] OK

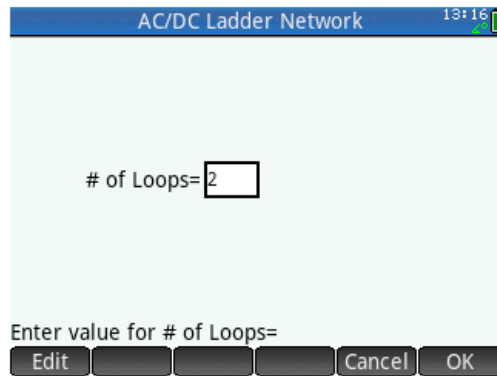
This screen indicates that when you press [Enter], the next screen will allow you to enter the dc voltage Es in a 1x1 matrix M2. The reason for the matrix is that it allows you to enter REAL or COMPLEX numbers more easily. There are other methods for entering Complex numbers but unfortunately you cannot enter (2E3,400) in Z1 as in a hp50g directly, but a Matrix will allow it in an HP Prime.

M2 13:15

	1	2
1	24.000E0	
2		

Edit More Go To Go -> Cancel OK

Enter 24 press [Enter] twice.



Next enter the number of loops in your circuit. Default is 2.
Press [Enter], for the circuit below.

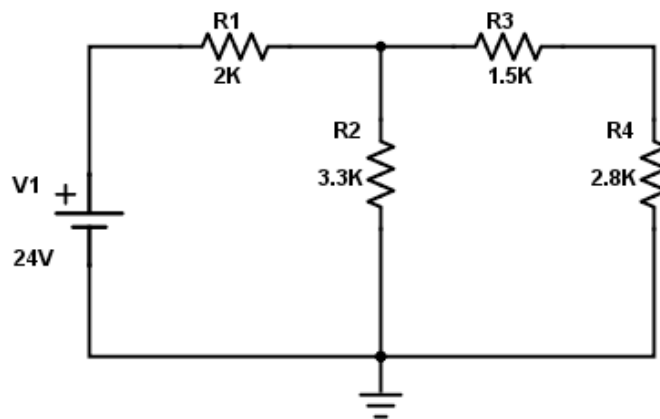


FIG 1.1

	1	2	3
1	2.0000E3	3.3000E3	
2	1.5000E3	2.8000E3	
3			

Enter the Resistor value in the matrix M1 and press [Enter] after each value and the cursor will automatically flow to the next position. Press [Enter]

Terminal 13:19

```
Es = 24.000E0_volts   Polar = [24.000E0,0.0000E0]
Zt = 3.8671E3_Ω      Polar = [3.8671E3,0.0000E0]
It = 6.2062E-3_Amps   Polar = [6.2062E-3,0.0000E0]
Va = 11.588E0_volts   Polar = [11.588E0,0.0000E0]
Vb = 7.5454E0_volts   Polar = [7.5454E0,0.0000E0]
Enter
```

Note that for a DC circuit you simply ignore the Polar values on the right. Press [Enter]

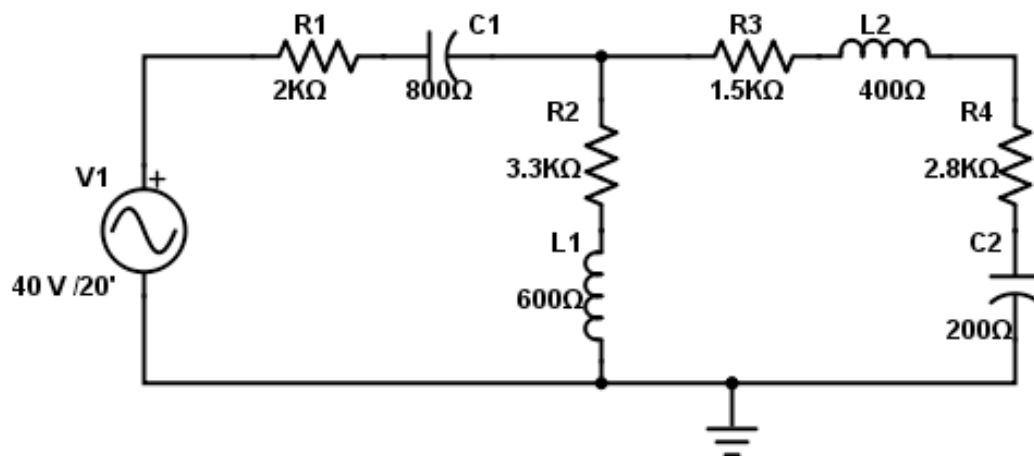
Ladder 13:20

LADDER 0.0000E0

Sto ▶

At this point the program can be restarted.

Press [Enter]



Next we solve the AC circuit above using the same approach.

This time I choose Digit = 2 to make more room on the screen for COMPLEX numbers.
Move the cursor to Digit and enter 2. [Enter], leave Angle at 2 press [Enter].

Press [Enter].

Enter 40/_20' 40 [Shift] [X] 20 [Enter].

M2
18:05

	1	2
1	(37.6E0,13.7E	
2		

Edit More Go To Go → Cancel OK

Box 1,1 now contains the Rectangular value (37.6E0,13.7E0). Press [Enter].

AC/DC Ladder Network
18:05

of Loops=

Enter value for # of Loops=

Edit Cancel OK

Default is 2. Press [Enter].

M1
18:07

	1	2	3
1	(2.00E3,-800E	(3.30E3,600E	
2	(1.50E3,400E	(2.80E3,-200E	
3			

Edit More Go To Go → Cancel OK

Enter the circuit values pressing [Enter] after each entry.
 (2E3,-800) (3.3E3,600) (1.5E3,400) and (2.8E3,-200) press [Enter].

Terminal 18:08

```
Es = (37.6E0,13.7E0)_volts    Polar = [40.0E0,20.0E0]
Zt = (3.88E3,-571E0)_Ω      Polar = [3.92E3,-8.38E0]
It = (8.98E-3,4.85E-3)_Amps  Polar = [10.2E-3,28.4E0]
Va = (15.7E0,11.2E0)_volts   Polar = [19.3E0,35.3E0]
Vb = (11.0E0,6.02E0)_volts   Polar = [12.6E0,28.6E0]

Enter
```

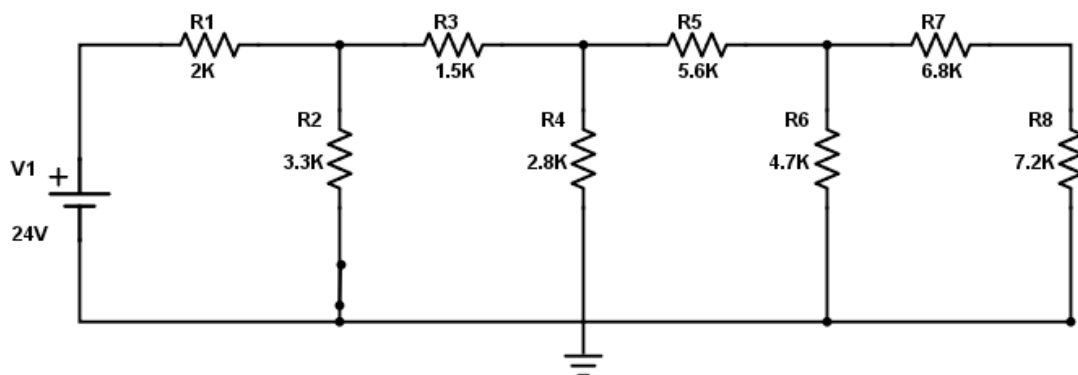
Now you can see your answers in Rectangular and Polar forms.

Ladder 18:09

LADDER 0.00E0
0.00E0

Sto ▶

After pressing [Enter], your ready for the next circuit.



```
Es = 24.000E0_volts
Zt = 3.7313E3_Ω
It = 6.4320E-3_Amps
Va = 11.136E0_volts (across R2)
Vb = 6.5498E0_volts (across R4)
Vc = 2.527E0_volts (across R6)
Vd = 1.2998E_volts (across R8)
```

Enter

In a dc Circuit ignore the Polar form.

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