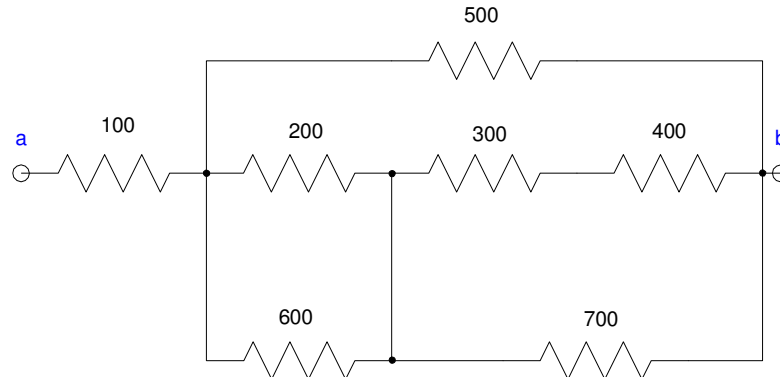


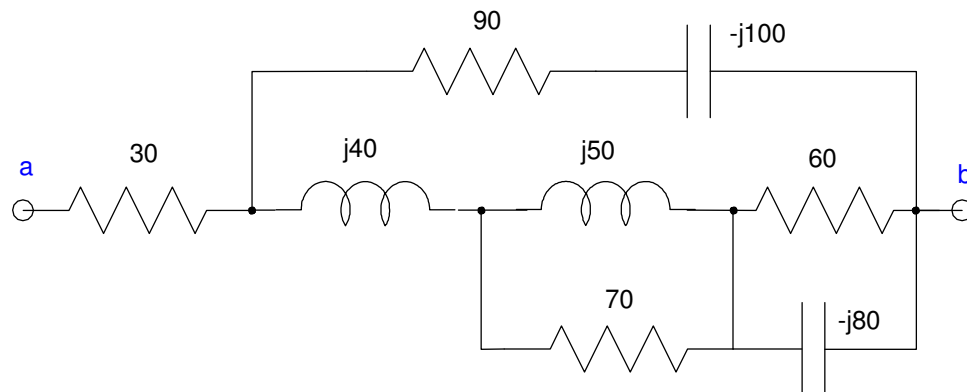
ECE 476/676 - Homework #2

Loops, if-Statements, Subroutines - Due Monday, September 8th

1) Using Python subroutines, determine the resistance R_{ab}



2) Using Python subroutines, determine the resistance Z_{ab}



3) A and B are playing a dice game.

- Player A takes the sum of five 12-sided dice (5d12)
- Player B takes the sum of three 20-sided dice (3d20)

Whoever has the higher total wins.

Write a Python program to play a single games. Give the results for playing five games (check that the results change game to game)

```
# Sample Code:
from random import randrange
d12 = randrange(1,12)
d20 = randrange(1,20)
```

4) Using Python along with a Monte-Carlo simulation with 10,000 matches, determine the probability that A wins if each match is the best of 5 games. (for-loops)

5) Using Python along with a Monte-Carlo simulation with 10,000 matches, determine the probability that A wins if each match continues until one player is up by three games (while loop)