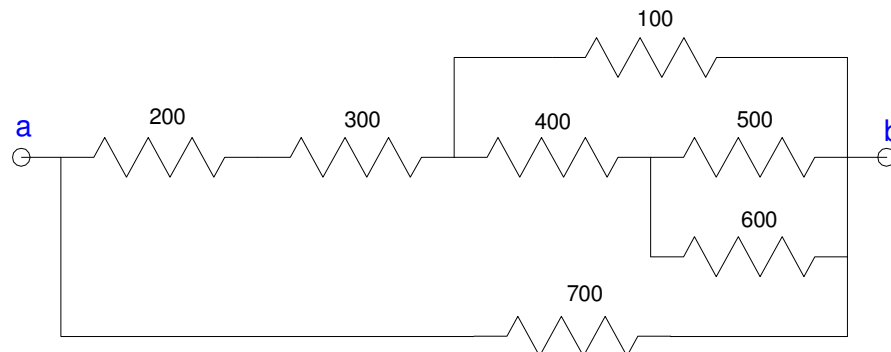


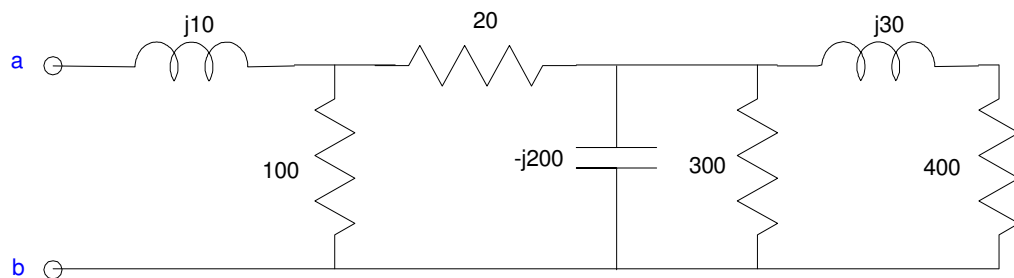
ECE 476/676 - Homework #2

Loops, if-Statements, Subroutines - Due Monday, January 27th

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 four 10-sided dice ($4d_{10}$)
- Player B takes the sum of eight 6-sided dice ($8d_6$)

Whoever has the higher total wins.

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

```
# Sample Code:  
from random import randrange  
d10 = randrange(1,11)  
d6 = randrange(1,7)
```

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 two games (while loop)