

## Homework #4

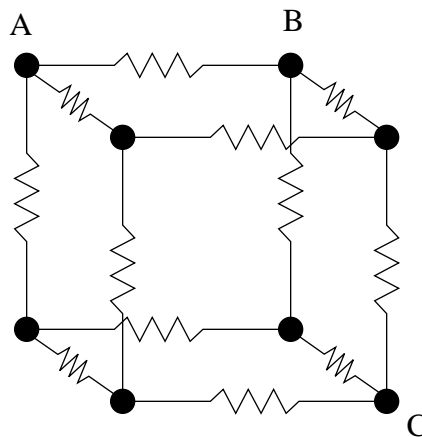
Due: Wed. at beginning of class.

Reading: Handout

Ref: Ma 5a Text, ECE 2a text

1. The following differential equation has one solution that is a polynomial in  $x$ , -- find the polynomial solution:  $(2x - 3x^3)y'' + 4y' + 6xy = 0$

2. Consider the following resistor network:



Given that all resistors are  $1\Omega$ , find the resistances between nodes:

- A to B
- A to C
- B to C

(Hint: use symmetry to find nodes that must be at a common potential.)

3. Suppose a  $2A$  current source is placed so that a positive current flows into node A and out of node C, and that a  $3A$  source is placed so that a positive current flows into node A and out of node B. What voltage will appear between points B and C? (Hint: use superposition!)