

# Frank Martino - Proof of Skills Day 1

## Q1 Circuit Simulation

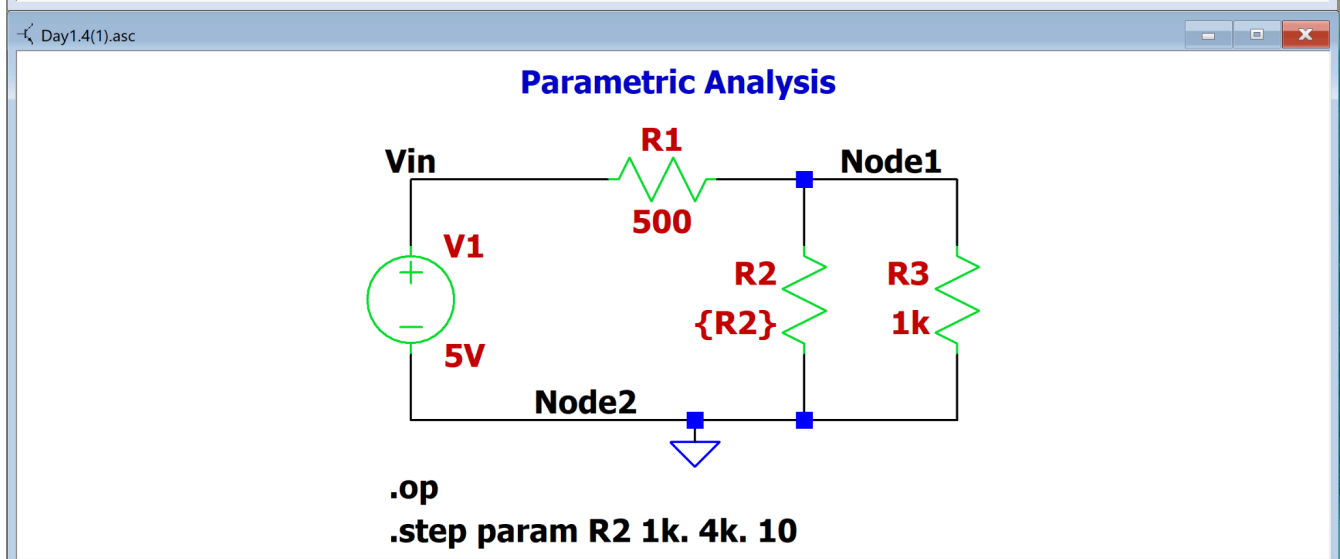
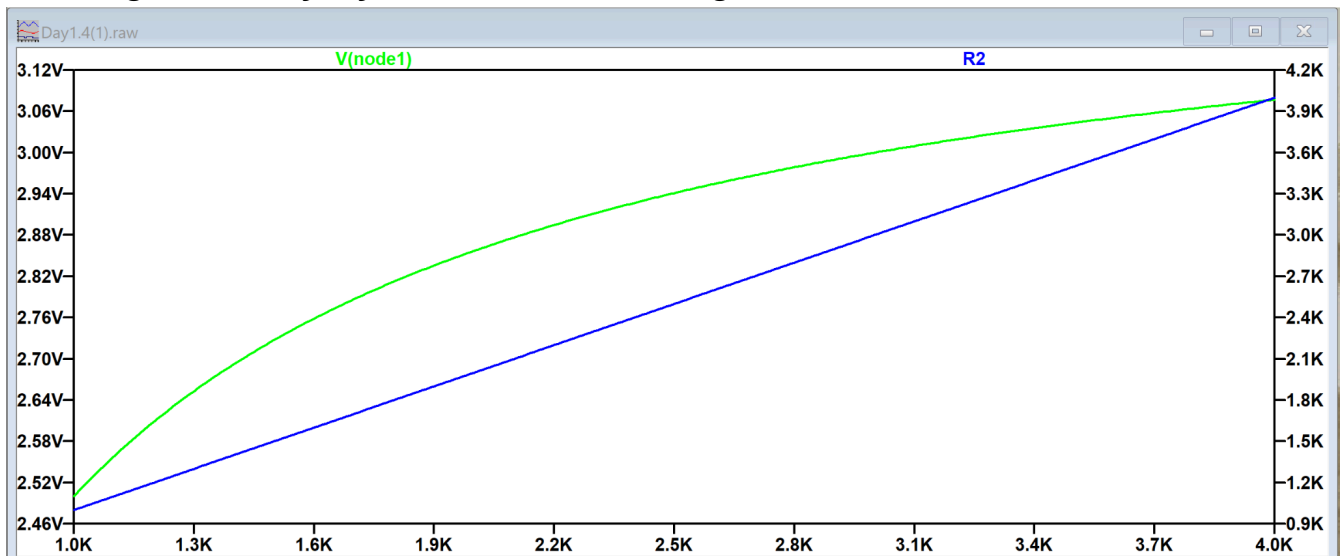
Prove your skill set using LTSpice (preferred Circuits simulation program) or equivalent simulation program (i.e. PSpice or MultiSim..)

Each of the **Circuit Simulation** Objectives above should reflect the following goals:

- 1. I can **change my schematic and plot background to white** and cut and paste on an external document
- 2. I can **change the line thickness and color** of my schematic and simulation output
- 3. I **can label the simulation output clearly with the circuit schematic component names**
- 4. I can intentionally show the most relevant part of a simulation by **changing the simulation output window**

### Q1.4 Parametric Analysis

I can step through parameters with parametric analysis to repeatedly measure voltages as I vary my resistance over a range of values



Above I created a circuit simulation where there are 3 resistors R1(500Ω) which is in series to the parallel group of R2 whose resistance varies from 1kΩ to 4kΩ in 10Ω increments and R3(1kΩ). Above we can follow the graph and see that the resistance increases linearly, the blue line, but causes the voltage, the green line, to increase nonlinearly. This makes sense since as time goes on the resistor R1 is using is less and less voltage since the parallel combination of R2 and R3 are increasing in resistance and take more of the voltage from R1.