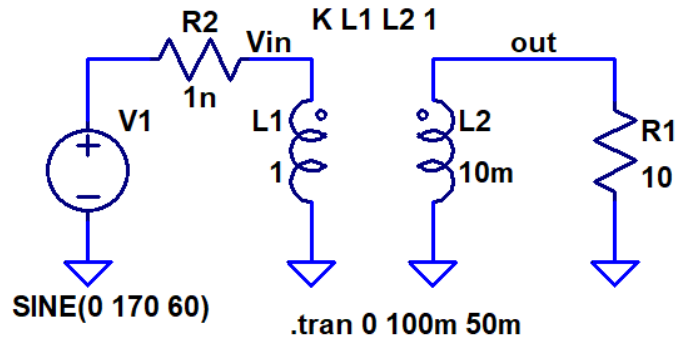


Show your work for credit and put a box around each of your answers (follow the hw guidelines!)

- Find the RMS voltages and currents in the following circuit. Verify your answers using LTspice. As always show your hand calculations. (5 points each)



- Show how the following models the transformer (F12-090-C2) example data sheet on the lecture/video notes web page. Comment on the RMS voltages on the primary and secondaries (make sure you understand the dots and how they relate to phase shift). Note that the 1 nano ohm simply ensures (for LTspice) that a voltage source doesn't drive an inductor (spice doesn't like this). The 1G on the output can be thought of as an open but is used to complete the circuit (spice doesn't like opens, that is, not complete circuitual paths). The grounds are needed so that when you measure a voltage it has a reference (ground). Show, in simulations (making sure you understand) the following: a) how the secondaries would be connected to get 12V RMS (assuming each one is roughly 6V RMS), b) how connecting ground to 6 and 7 results in two 6V RMS sinusoids out of phase, c) how connecting 5 to 7 and 6 to 8 allows the transformer to supply more current. Comment on each of these from your simulations (5 points)

