Common Mistakes for the Final Exam

Before you submit your test, did you make sure that...

- Your calculator was in degrees instead of radians?
- You identified any supernodes or supermeshes?
- You didn't allow a current source to be considered a supernode? (Remember: A supernode is a voltage source, independent or dependent, that's in between two non-reference essential node-voltages)
- You didn't allow a voltage source to be considered a supermesh? (Remember: A supermesh is a current source, independent or dependent, that's shared between two meshes)
- You didn't fail to use a known node-voltage, such as a voltage source directly above ground?
- You didn't fail to use a known mesh-current if a mesh current is in its own mesh?
- Your number of equations matched your number of unknown variables in a system of equations?
- You turned off independent sources when solving for equivalent resistance or impedance?
- You didn't open a voltage source instead of shorting it when turning it off?
- You didn't short a current source instead of opening it when turning it off?
- You didn't open an inductor when solving an RL circuit instead of shorting it during DC steady-state?
- You didn't short a capacitor when solving an RC circuit instead of opening it during DC steady-state?
- You used the correct equations corresponding to either maximum or RMS power during AC power analysis? (There are different equations for either RMS or Maximum power for both individual elements/sources and for maximum power transfer)
- You used the correct maximum power condition? (For an AC circuit, $Z_{th} \neq Z_{Load}. Z_{Load} = Z_{th}^{*}$)
- You used the correct definition for the conjugate of a complex number? ($(a + bj)^{*} = a - bj$, only the sign for the imaginary component changes)
- You used the superposition theorem when there are two or more AC sources with different frequencies, ω?
- You used the correct equivalent resistance or impedance value when doing current division? (You will not always use the equivalent resistance or impedance for the entire circuit, only the elements in parallel)
- You used i instead of j in Symbolab?
- You used the correct definition for τ for an RL circuit? ($\tau \neq \frac{R}{L}$)