HW#2 Hint

Problem #1

- Use s-domain representation for capacitor when you derive the gain expression.

Problem #2

- See next pages

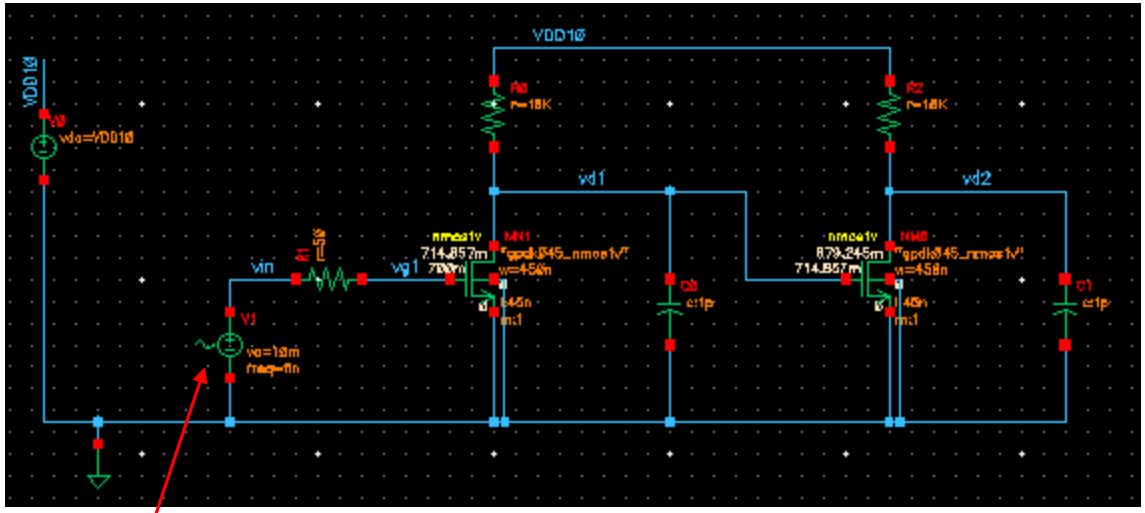
Problem #3

- Use VTH expression including gamma term when you have the body effect
- Solve for the source voltage
- Then use the Saturation current equation to solve for Vgs
- This will give you the Gate voltage you need

Problem #4

- You need a channel-bulk capacitance. Use Cjcb=1fF/um2

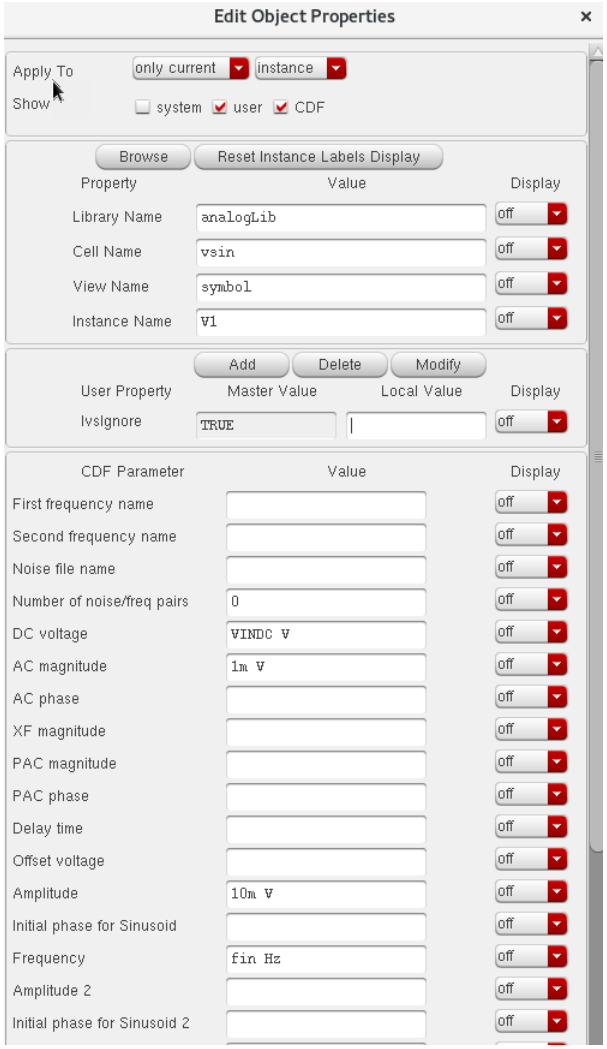
Cadence Simulation Problem



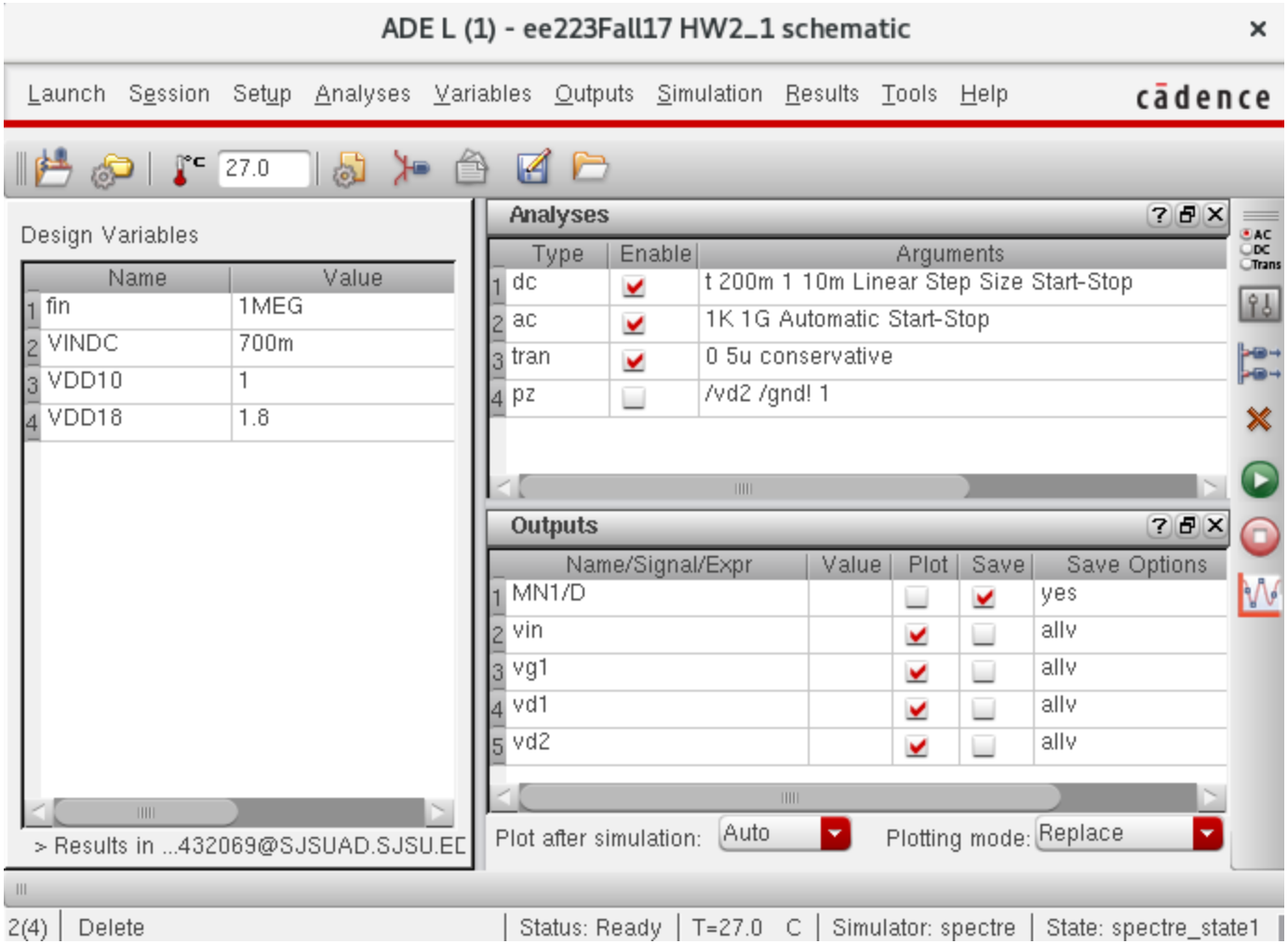
Use “vsin” from analogLib

Cadence Simulation Problem

Fill out the form similar to below



Cadence Simulation Problem



Cadence Simulation Problem

When you sweep Vin, it is the same as you are sweeping the Vg1
So, plot the drain current MN1 and take deriv from Calculator

I will add more hints next time if you are stuck.