Charge Pump Problems

Problem 24

Draw the schematic of a charge pump (showing the clocks needed) required to generate $V_{pump} \geq 4V_{DD}$ in C5 process with $V_{DD} = 5V$. Ignoring body-effect, what is the steady-state pump output voltage?

Problem 25

Draw the schematic of a charge pump (showing the clocks needed) required to generate $V_{pump} \approx -0.5V$ in C5 process. You can pick a suitable value for V_{DD}.