

2010 Qualifying Exam
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1. Sketch V_{out} .
Ans: final $V_{out} = 1.5 V_{DD}$
2. What is initial total stored energy ? What is final total stored energy ?
Ans: initial $E = CV_{DD}^2$; final $E = 1.25CV_{DD}^2$
3. If C can be varied, what is the maximum final V_{out} ?
Ans: $C_{left} \gg C_{right}$; maximum final $V_{out} = 2 V_{DD}$
4. Modify the circuit to achieve final $V_{out} = 3 V_{DD}$.
Many possible solutions including the following :
 $C_{left} \gg C_{right}$; insert a diode between the 2 C , drive the bottom plate of the right C to V_{DD} .

