UNIVERSITY OF CALIFORNIA
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	Homework 3	**EECS 247**
B. E. BOSER	**Due Thursday, Oct 20, 2005**	**Fall 2005**

1. A full-scale sine wave with frequency f_X=7MHz is input to a DAC clocked at f_S=20MHz. Calculate the frequency and amplitude (relative to full-scale input) of all tones in the DAC output up to f=50MHz. Assume the DAC output for each sample is held for 30ns and returned to zero for 20ns. Ignore quantization noise and other non-idealities.

2. For the differential switched-capacitor integrator below, find the z-domain output/input transfer function assuming:
   a) Output is sampled in $\Phi 1$
   b) Output is sampled in $\Phi 2$
   c) For output sampled in $\Phi 2$, find the continuous-time equivalent for the integrator time-constant using the output expression derived. Assume $f_{signal} / f_{sampling} \ll 1$.