

P4. Integrator

We have seen that the gain of the inverting configuration can be written as  $-Z_2/Z_1$ , where  $Z_1$  and  $Z_2$  are impedances which are functions of complex frequency  $s$ . This allows us to make "active filters:" op-amp circuits with a gain that varies with frequency.

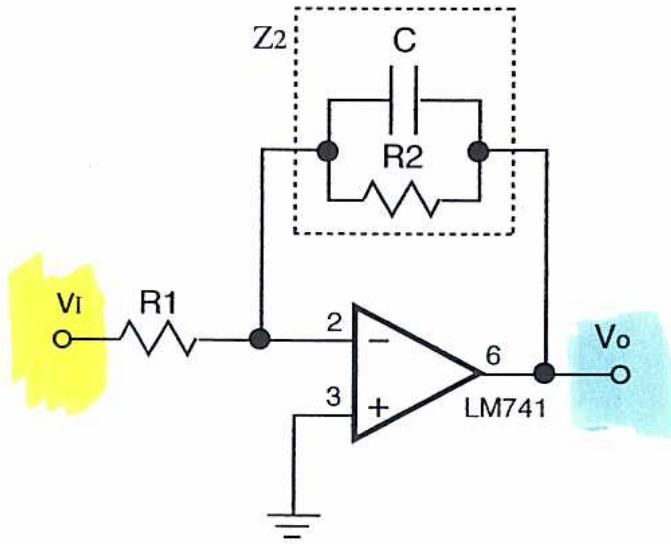


Figure 2.5

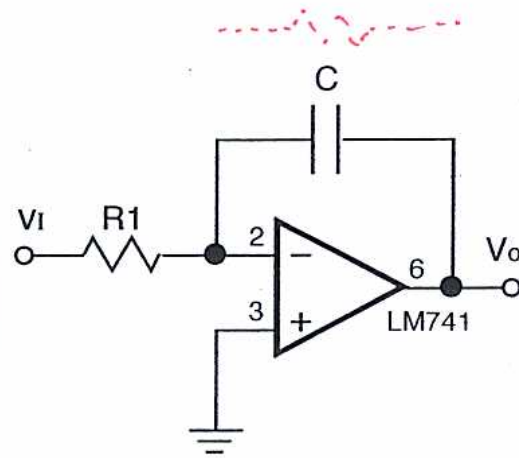
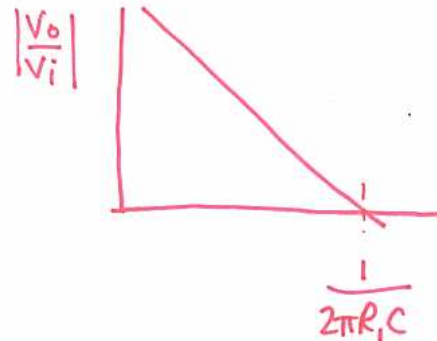
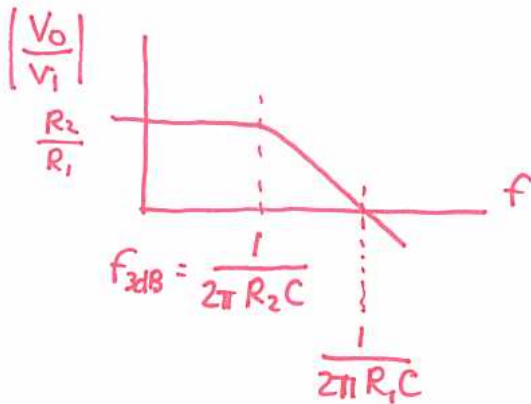


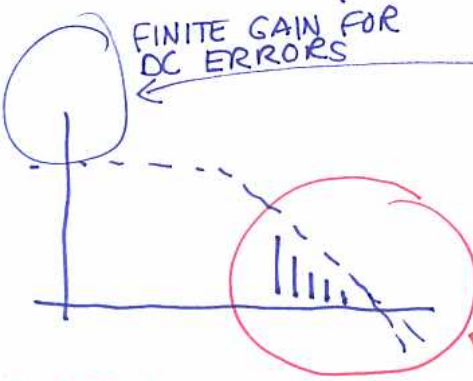
Figure 2.6



SQUARE WAVE (LOW FREQ)



(HIGH FREQ)



FINITE GAIN FOR DC ERRORS

$\infty$  GAIN FOR DC ERRORS! OUTPUT WILL INTEGRATE TO + OR - SUPPLY RAIL!

