

Name: _____ Section: _____

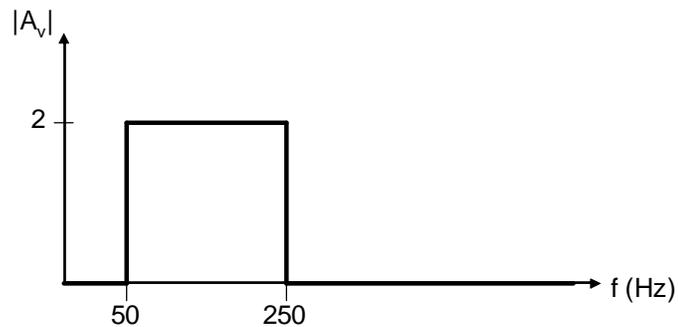
EE241: Electronics I
Problem Set 2
(Due 1/20/09)

These problems are based on Hambley, sections 1.8-1.11 and 2.1-2.4. Please complete the problems in pencil on engineering paper and attach them by staple to this cover sheet.

1. Hambley problem 1.51
2. An input signal given by:

$$v_i(t) = 0.5 + \cos(200\pi t) + \cos(2000\pi t)$$

is applied to an amplifier with the frequency characteristic for gain shown below:



- a. What is the expression for the output signal? (You can assume that the amplifier has no effect on the phase of the signal).
 - b. Use Excel or other graphing program to plot the input signal and output signal from 0 to 10 ms, using a time step size of 0.1 ms.
 - c. Is this an AC-coupled or DC-coupled amplifier? Why?
3. Hambley problem 1.64
 4. Hambley Problem 2.2
 5. Hambley Problem 2.9
 6. Hambley Problem 2.10
 7. Hambley Problem 2.12
 8. Hambley Problem 2.14
 9. Hambley Problem 2.17
 10. Hambley Problem 2.20
 11. Hambley Problem 2.22
 12. Hambley Problem 2.25
 13. Hambley Problem 2.28 (use Multisim instead of SPICE if you wish to verify)
 14. Hambley Problem D2.37