Special Problem 2.7-4

The amplifier below has an open-circuit voltage gain $A_v = \frac{v_o}{v_i}$ and a 3dB bandwidth of 1 MHz.

The op-amp is not ideal.

1) At what frequency (in Hertz) is the gain of this amplifier equal to one (i.e., $|A_v(f = ?)| = 1$)?

2) What is the gain this amplifier at a signal frequency of 5 MHz (i.e., $|A_v(f = 5 \times 10^6)| = ?$)?

3) Determine a new value of resistor $R_2$ so that bandwidth of the amplifier is changed to 4.0 MHz.