**Homework Set #21**
**DUE Friday, May 5, 2017**

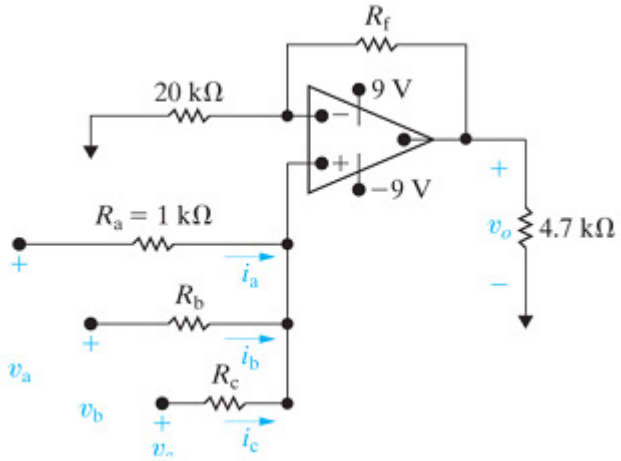
1. Design an inverting summing amplifier so that

$$v_o = -(3v_a + 5v_b + 4v_c + 2v_d).$$

If the feedback resistor ($R_f$) is chosen to be 60 kΩ, draw a circuit diagram of the amplifier and specify the values of $R_a$, $R_b$, $R_c$, and $R_d$.

2. The following circuit has to have an output voltage given by:
$V_0 = 4v_a + v_b + 2v_c$

   a. Specify the numerical values of $R_b$, $R_c$, and $R_f$.
   b. Using the values found in part (a) for $R_f$, $R_b$, and $R_c$, calculate (in microamperes $i_a$, $i_b$, and $i_c$ when $v_a$ = 0.75 V, $v_b$=1.0 V, and $v_c$ = 1.5 V.




(HINT: Use superposition to get an expression for $V_O$ in terms of the unknown resistors. This gives you the ratios and $R_a$ is known.)