Q. Design an opamp based circuit that would generate the following output (V_{out}) given two input voltages v_{s1} and v_{s2}

$$V_{out} = 2.5 v_{S1} - 4 v_{S2}.$$

You may assume ideal opamp characteristics. Choose resistor values as small as possible but with the **constraint that they must be larger than or equal to 1$k\Omega$.**

As usual, show all steps of your work to receive full credit for the answer.