

EECS 100/43

Lab 7 Strain Gauge: Prelab

NAME: _____/SECTION_____

a. TASK 1 Derive the gains of the two op-amp circuit in figure 2 (refer to your guide for figure 2). Fill table 1.

Op-amp	Gain Expression (in terms of output voltages and input voltages)
U1A (Difference amplifier)	G1:
U1B (Noninverting Amplifier)	G2:

Table 1. Theoretical Gain Calculations

Show your work here:

The total gain is: $G = V_7/(V_b - V_a) = G1 \times G2 =$ _____

b. TASK 2 You will notice in figure 3 that we have a potentiometer in series with the strain gauge. Why do you think we have this setup? Why can't we just set the other resistances in the Wheatstone bridge to be the "rest" resistance of the strain gauge?

HINT: IS THE "REST" RESISTANCE ALWAYS EQUAL TO 119.4 OHMS?