Name_____

The circuit at right might be called an "adder-subtracter". Find an expression for the output voltage, v_o, in terms of the 4 input voltages, v_a, v_b, v_c, and v_d.

R_1 20 kΩ

R_6 180 kΩ

v_a

R_2 18 kΩ

v_b

R_3 30 kΩ

v_c

R_4 20 kΩ

v_d

R_5
20 kΩ

v_o

$v_o =$ _____