ET 438b
Binary-Weighted Resistor DAC
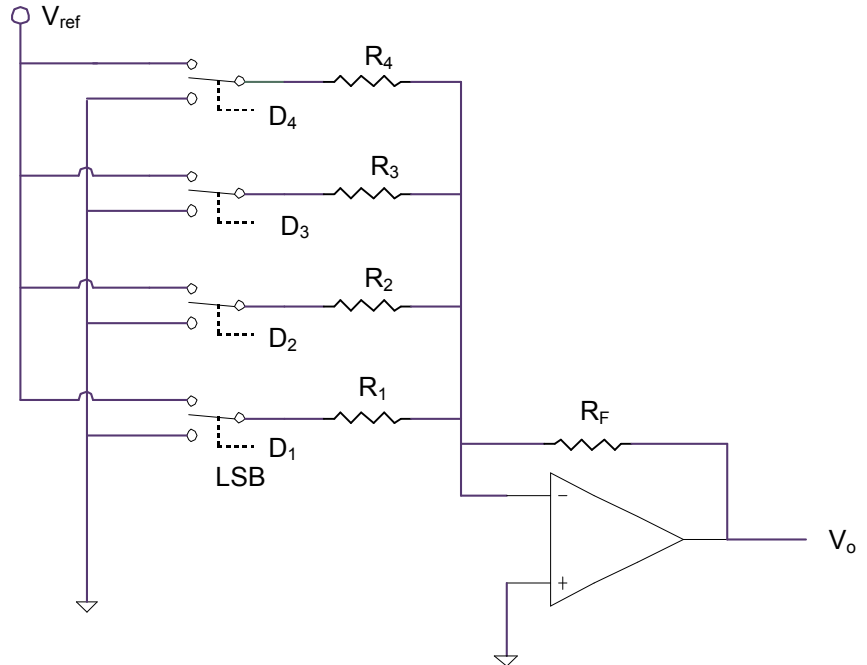
For the DAC shown at the left, the values of resistors are:

R_1 = 20 kΩ
R_2 = 10 kΩ
R_3 = 5.0 kΩ
R_4 = 2.5 kΩ

The value for V_{ref} is 0.5 Vdc.

For a digital input of:
    D_1 = 1
    D_2 = 1
    D_3 = 1
    D_4 = 1

1.)   Find the value of R_F that gives an output voltage of -10 Vdc.

2.)   What is the voltage value of the DAC output with only the least significant bit in the logic 1 position?

3.)   Calculate the resolution of the DAC above.