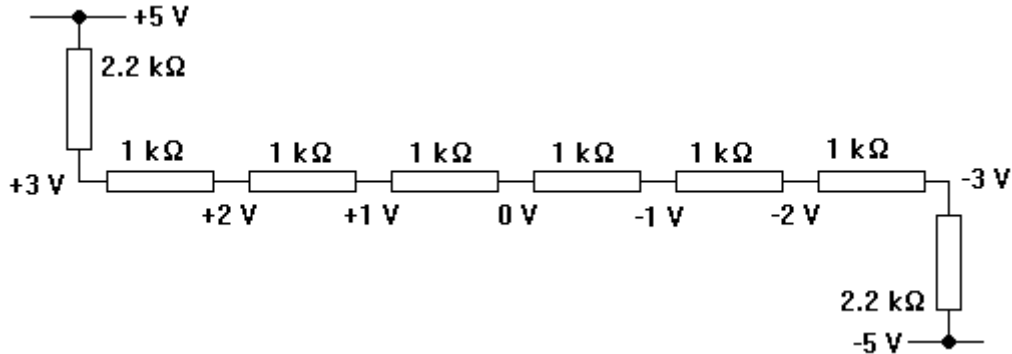


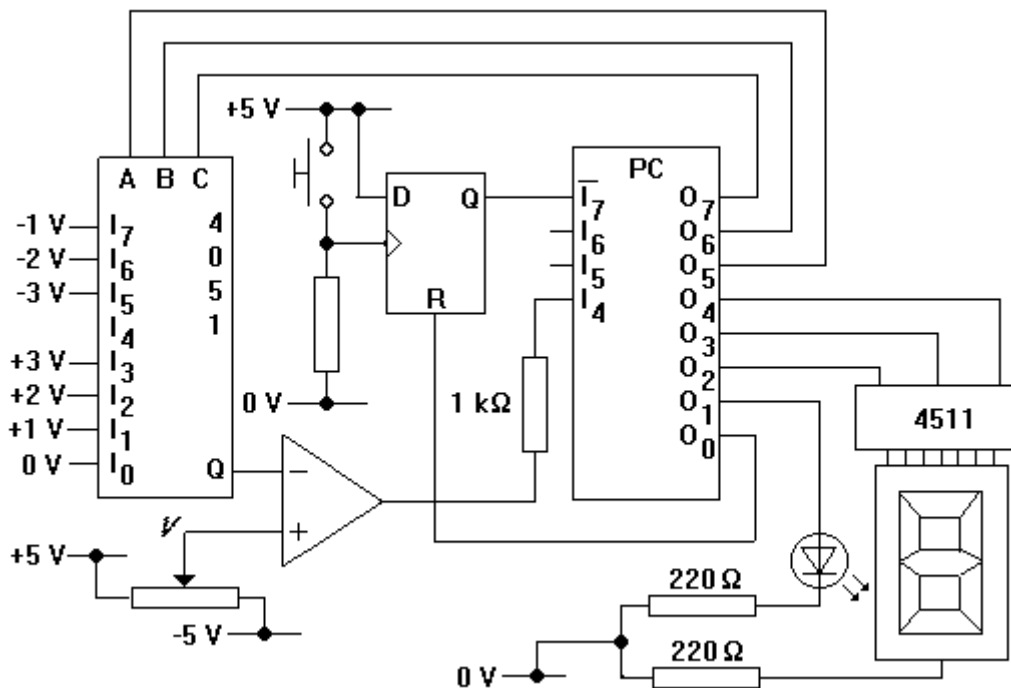
Adding an ADC to a PC

You are going to convert your PC into a simple digital voltmeter.

- 1 Assemble the resistor ladder shown below. Use a voltmeter to check that the seven reference voltages are approximately as indicated.



- 2 Now connect the seven reference voltages to the inputs of a 4051 multiplexer, as shown below. Pin 7 of the multiplexer i.c. will need to be connected to -5 V, to allow negative signals through to the output.



- 3 You are going to program the PC so that whenever the switch is pressed, the LEDs display the value of V. The program will need to go through the following steps:

- reset the flip-flop and wait until the switch is pressed
- increase the voltage at Q from -3 V to +3 V until the output of the op-amp goes low
- feed appropriate signals to the 4511 decoder and the single LED
- return to the first step

You will need to use the look-up tables!