

# Physics 335, Spring Quarter 2013

## Electric Circuits II, Homework Assignment 4

### Due Tuesday May 7

1. For the “R-2R” DAC ladder shown below (figure 9.46 from the text book), calculate how much current flows through each of the 100k resistors. With the input as shown, what’s the output?

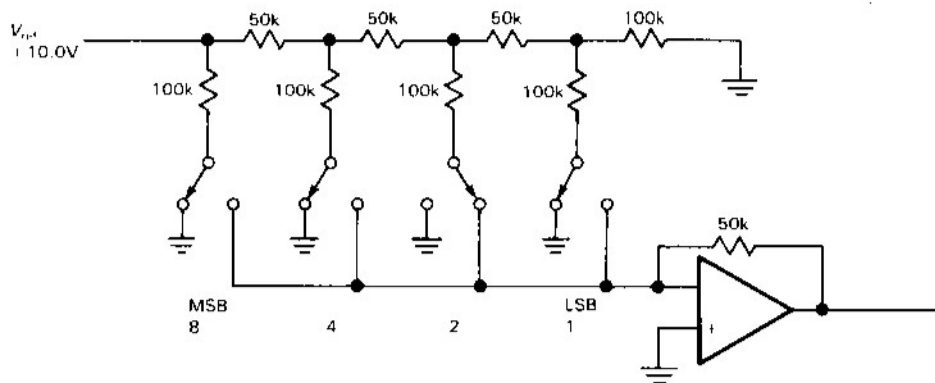


Figure 9.46. R-2R ladder.

2. Consider the “half-flash” ADC shown below (figure 9.50 from the text book), where that the reference voltage  $V_{ref}$  is 10.0 Volts and each 4-bit flash ADC divides its range into 16 equally-spaced voltage segments. If analog-in is 7.21 Volts, what’s the digital output?

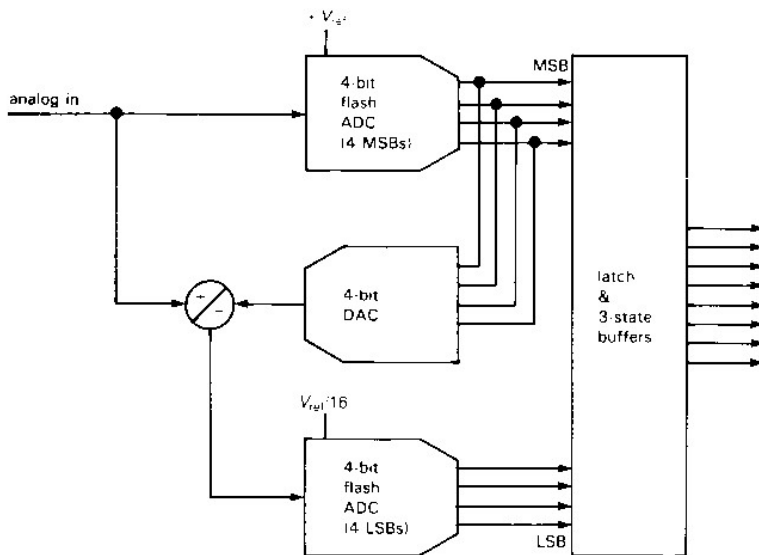


Figure 9.50. Half-flash ADC.

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