Exercise 1

1. A blood flow meter measures in the range from 0 to 10 ml/s and the flow is converted to linear voltage. Define the amount of bits (at minimum) needed in the AD converter if the accuracy of measurements must be at least 0,08 ml/s and 2 bit margin is needed for different kind of error sources related to measurement.

2. A blood flow meter measures amount of blood flowing in the vessel. During 2 first hours the flow is 5 ml/s, during next 4 hours the flow is 3 ml/s, Let's consider that the average flow results from these two measurements. How much blood flows then during a day (24 hours)?

3. A hearing aid amplifies signal 58 decibels. What is the factor as number signal is multiplied in this situation?

4. The signal level in a hearing aid loudspeaker is 5mVpp. What is the signal level in the microphone of this hearing aid if the gain of this hearing aid is 44 dB?