HOMEWORK 1
GRAPH PLOTTING

1. In some patients it is impossible to measure body temperature by classical thermometer therefore it is necessary to use other ways. One of the ways is thermocouple which consists of two different metals joined at both ends. When these joints are at different temperatures current flows through the circuit. The readout voltage at thermocouple located at different places along the leg is shown in the table:

Position	Mid thigh	Knee	Mid calf	Ankle	Mid foot	Thumb
U/mV	1.24	1.20	1.15	1.07	0.99	0.89

Calibration of thermocouple shows following relationship between temperature and voltage:

T/ ^{0}C	10	15	20	25	30	35	40
U/mV	0.39	0.59	0.79	0.99	1.19	1.40	1.61

From obtained data:

a) draw the calibration curve and determine the functional dependence (Note: *U is function of T*)
b) determine the temperature at various leg locations
c) draw how the temperature is changed with distance between hip and measuring point

Position	Mid thigh	Knee	Mid calf	Ankle	Mid foot	Thumb
Distance from hip/cm	20	40	60	80	90	100
T/ ^{0}C						

Remember:
- x and y axes scales are mutually independent
- unit dimension on the axes is chosen in such way that the graph falls in the middle of the coordinate system
- graph is drawn freehand unless functional dependence is known