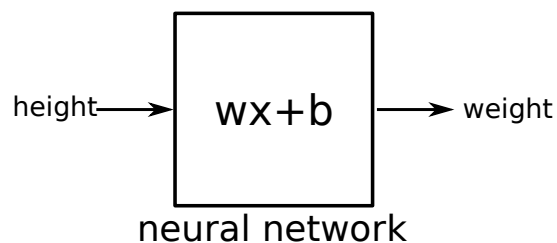


Lesson 8 (Data Normalization) Below is a table of the heights (in inches) and the weights (in pounds) of 10 randomly selected children.⁶

- (a) Plot the contours of the loss function $MSE(w, b)$ for the neural network shown below.
- (b) Repeat part (a) after the heights and weights have been standardized. Will normalizing the data in this way improve the convergence speed of the gradient descent algorithm. Explain.

height	weight
67	128
67	123
72	129
69	143
69	132
70	142
67	112
67	118
66	108
68	119



⁶Data source: [SOCR Data](#)