Task 1

Compute the following sums:

i) $\sum_{n=0}^{99} 2n^2$

ii) $\sum_{n=1}^{100} n$

iii) $\sum_{n=2}^{200} 2n$

iv) $\sum_{n=1}^{200} 2n^2$

Task 2

$$a_1 = \frac{n\sum x_i y_i - \sum x_i \sum y_i}{n\sum x_i^2 - \left(\sum x_i\right)^2}$$

$$a_0 = \frac{1}{n}\sum y_i - \frac{a_i}{n}\sum x_i = \bar{y} - a_i\bar{x}$$

Use the above formulae to find the y-intercept (a_0) and slope (a_1) of the least squares best fit of the following data.

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x = [0.526993994, 0.691126852, 0.745407955, 0.669344512, 0.518168748, 0.291558862,
0.010870453, 0.71818573, 0.897190954, 0.476789102]

y = [3.477982975, 4.197925374, 4.127080815, 3.365719179, 3.387060084, 1.829099436,
0.658137249, 4.023164612, 5.074088869, 2.752890033]
```