NAME:

QUIZZ ON LECTURE 1

— Write the following model model in matrix form, expanding the matrices, describing the detail of their contents and their dimensionality: $\forall i \in \{1, .., n\}$,

$$y_i = \beta_0 + \beta_1 x_{1i} + .. + \beta_k x_{ki} + e_i$$

— Without deriving anything, briefly describe in plain language the steps to compute the formula for the OLS estimator

— Consider the following estimated model such that for each firm $i \in \{1, .., n\}$,

$$q_i = \hat{\beta}_0 + \hat{\beta}_1 \text{marketing}_i + \hat{\beta}_2 \text{sector}_i + u_i$$

where q_i represents the quantity of units sold by firm i, marketing_i its marketing spendings in thousands of dollars and sector_i the sector in which its activities are. Write a sentence that gives an interpretation for the value of $\hat{\beta}_1$.