Problem 1:

$$y = [-4, 8, 7, -15, 12]$$
$$\hat{y} = [2, 9, -1, -16, 18]$$

$$MAE = \frac{1}{n}\sum|y_i - \hat{y}_i|$$
$$MAE = \frac{1}{5}([-4, 8, 7, -15, 12] - [2, 9, -1, -16, 18])$$
$$\boldsymbol{MAE = 4.4}$$

$$MSE = \frac{1}{n}\sum(y_i - \hat{y}_i)^2$$
$$MSE = \frac{1}{5}([-4, 8, 7, -15, 12] - [2, 9, -1, -16, 18])^2$$
$$\boldsymbol{MSE = 27.6}$$

$$MAPE = \frac{1}{n}\sum\frac{|y_i - \hat{y}_i|}{|y_i|}$$
$$MAPE = \frac{1}{5}\frac{([-4, 8, 7, -15, 12] - [2, 9, -1, -16, 18])}{[-4, 8, 7, -15, 12]}$$
$$\boldsymbol{MAPE = 0.39}$$

Problem 2:

- Matrix 1

Problem 3:

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