

# Geostatistics assignment (MATH 330)

Name: \_\_\_\_\_

The mean and the standard deviation in geostatistics:

- Calculating the mean center:

Mean of the easting (x values):

Mean of the northing (y values):

$$\mu_x = \frac{\sum_{i=1}^N x_i}{N}$$

$$\mu_y = \frac{\sum_{i=1}^N y_i}{N}$$

- Calculating the standard deviation (which geographers call the “standard distance”):

$$\sigma = \sqrt{\frac{\sum_{i=1}^N (x_i - \mu_x)^2}{N} + \frac{\sum_{i=1}^N (y_i - \mu_y)^2}{N}}$$

Example:

	<u>Locational coordinates</u>	
Point	$X_i$	$Y_i$
A	2.8	1.5
B	1.6	3.8
C	3.5	3.3
D	4.4	2.0
E	4.3	1.1
F	5.2	2.4
G	4.9	3.5

Question 1:

What is the mean of the easting, that is  $\mu_x$ ? Put your answer to two digits past the decimal place.

Question 2:

What is the mean of the northing, that is  $\mu_y$ ? Put your answer to two digits past the decimal place.

Question 3:

What is the variance of the easting, that is  $\text{Var}(X)$ ? Put your answer to two digits past the decimal place.

Question 4:

What is the variance of the easting, that is  $\text{Var}(Y)$ ? Put your answer to two digits past the decimal place.

Question 5:

What is the standard distance, that is  $\sigma$ ? Put your answer to two digits past the decimal place.