



## **FACULTY OF SCIENCE**

### **SOWETO SCIENCE CENTRE ( SSC)**

#### **Teachers workshop**

Subject: Mathematics : Correlation and Regression

Facilitator: Ms. W. Rabotho

Date: July 2015

TO BE HANDED IN FOR FORMAL ASSESMENT

Using appropriate measures and diagrams, evaluate which variable **best explains changes in cholesterol** for the sample information provided.

<b>Age</b>	58	69	43	40	64	53	48	35	74	50
<b>Cholesterol level</b>	189	235	193	180	160	195	215	170	199	180
<b>Weekly exercises</b>	3	4	6	0	2	2	5	4	1	3

Using the following guidelines

- By intuition draw and evaluate scatter plots. What are your expectations about the strength and direction of the suspected relationship?
- Use the correlation coefficient to quantify your expectations in part a above.
- Find the regression equation of cholesterol level on your preferred x-variable.
- Briefly explain the meaning of the values of  $b_0$  and  $b_1$  calculated in part c above.
- Calculate  $r$  and  $r^2$  and explain what they mean.
- Plot the regression line.
- If your x-variable is age, predict cholesterol levels for a 58 year old male and a 75 year old male respectively if possible.
- If your x-variable is weekly exercises, predict cholesterol levels for 5 and 7 weekly exercise schedules respectively, if possible.