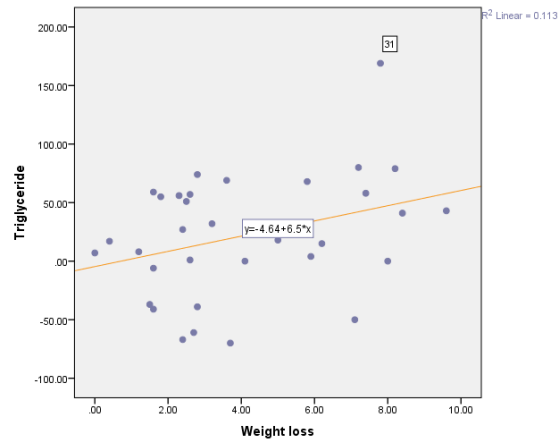


## Practical Week 2

### Solutions

#### Question 1

1.



A moderate linear relation exists. Case number 31 seems inconsistent with the rest, but we will discuss outliers and influential cases later in the course.

2.

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.336 <sup>a</sup>	.113	.085	<b>48.80066</b>

a. Predictors: (Constant), Weight-loss

b. Dependent Variable: Triglyceride reduction

$R^2 = .113$  is quite low.

3.

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	9666.838	1	9666.838	4.059	.052 <sup>b</sup>
Residual	76208.132	32	<b>2381.504</b>		
Total	85874.971	33			

a. Dependent Variable: Triglyceride reduction

b. Predictors: (Constant), Weight- loss

$F = 4.059$ ,  $p\text{-value} = .052$ . The regression is marginally insignificant.

4.

Either from ANOVA or Model Summary:  $s^2 = 2381.504$  or  $s = 48.80066$

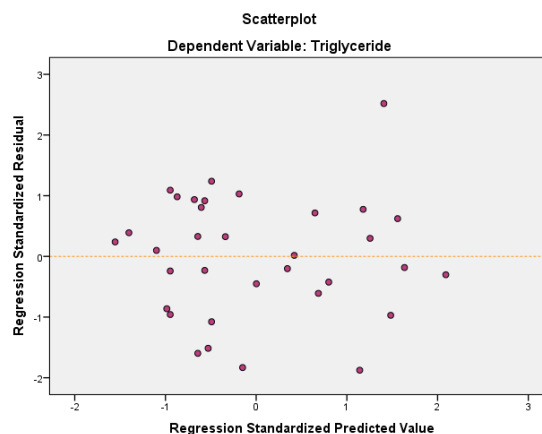
5.

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-4.638	15.635		-.297	.769
Weight-loss	6.499	3.226	.336	2.015	.052

a. Dependent Variable: Triglyceride reduction

Triglyceride reduction =  $-4.638 + 6.499$  (Weight-loss)

6. **Constant variance:**

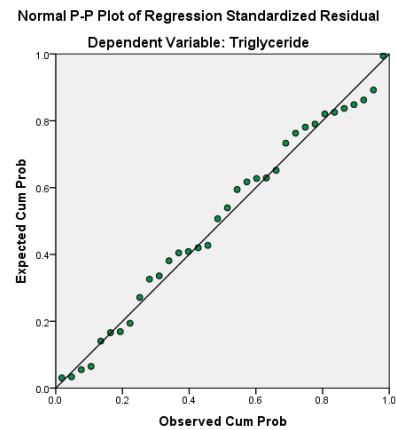
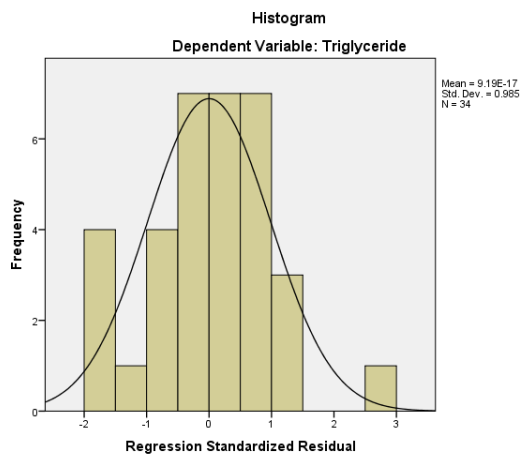


There is no indication (pattern) of heteroscedasticity.

Correlations			AbsRes	Unstandardized Predicted Value
Spearman's rho	AbsRes	Correlation Coefficient	1.000	-.005
		Sig. (2-tailed)	.	.977
		N	34	34
	Unstandardized Predicted Value	Correlation Coefficient	-.005	1.000
		Sig. (2-tailed)	.977	.
		N	34	34

Spearman rank correlation coefficient between the absolute value of the residuals and the predicted values (-.005) is not significantly different from zero, indicating that the variances are equal.

## Normality:



### Tests of Normality

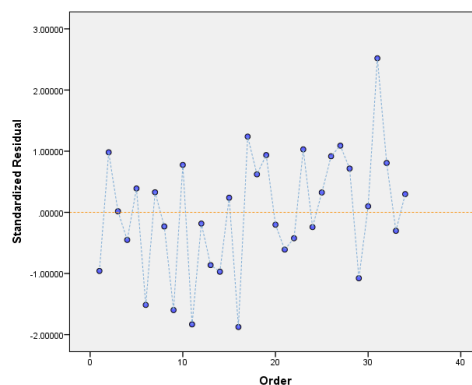
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.075	34	.200 <sup>*</sup>	.973	34	.554

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

All in all, there is no evidence to question normally distributed errors.

## Independence:



### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.336 <sup>a</sup>	.113	.085	48.80066	2.112

a. Predictors: (Constant), Weight-loss

b. Dependent Variable: Triglyceride reduction

There is nothing to indicate dependent errors.