

Essentials Mathematics

Unit 2

Task #9

Statistical Investigation Process



Due: Thursday 18th August 2016

Conditions:

Period allowed for Completion 1 Week
In Class, technology and/or Calculator

Marking:

Maximum number of marks: 24 marks
Task weighting: 13% Overall Grade

Mathematics: Essential
Statistical investigation process

Are males better drivers?

A student in class has suggested that males are better drivers than females. He went on to say that to be a good driver you need fast reflexes. This promoted some discussion with other students in the class saying the ability to concentrate was also very important.

Investigate the statements made above and produce a report that justifies your answer to the question 'Are males better drivers?'

Your Task is to completed statistical investigation.

This investigation should include:

- ☐ an introduction that outlines the question to be answered and any further questions that could be explored
- ☐ selection and application of suitable mathematical and graphical techniques you have studied to analyse the provided data
- ☐ interpretation of your results relating your answer to the original problem
- ☐ communication of your results and conclusions in a concise systematic manner.

Your investigation report should include the following:

1. **Introduction** – two or three sentences providing an overview of your investigation. (3 marks)

2. **Numerical and graphical analysis**

 •• choose various statistical measures you have studied to analyse the data (5 marks)

 •• consider the most appropriate graphs which represent the data provided. (5 Marks)

3. **Interpretation of the results of this analysis in relation to the original question**

 ••• describe any trend and pattern in your data (two to three sentences)

 ••• state how your data relates to the original problem (two to three sentences)

 ••• use your knowledge and understanding gained in this unit to explain your results in one paragraph.

(7 Marks)

4. **Conclusion** (4 marks)

 •• Summarise your findings and conclusions in one paragraph.

DATA

A sample of data from the 2013 Census At School survey is provided below. The data was generated from a random sample of 60 Year 11 and 12 students who

provided information on their reaction time using their dominant hand and their concentration activity.

Female			Male		
	Reaction Time (sec) (dominant hand)	Concentration Activity (secs)		Reaction Time (sec) (dominant hand)	Concentration Activity (secs)
1	0.03	52	1	0.35	35
2	0.38	61	2	0.51	61
3	0.39	34	3	0.35	38
4	0.39	22	4	0.32	43
5	0.44	38	5	0.37	43
6	0.31	24	6	0.38	47
7	0.43	41	7	0.37	48
8	0.34	19	8	0.31	64
9	0.56	59	9	0.37	38
10	0.34	44	10	0.31	43
11	0.38	40	11	0.45	33
12	0.56	41	12	0.37	38
13	0.37	56	13	0.31	31
14	0.44	33	14	0.34	52
15	0.32	50	15	2.61	58
16	0.31	41	16	0.35	34
17	0.35	40	17	0.4	49
18	18.62	60	18	0.31	35
19	0.35	47	19	0.32	47
20	0.34	47	20	0.42	37
21	0.94	50	21	0.35	36
22	0.32	28	22	0.32	38
23	0.35	38	23	0.41	43
24	0.37	40	24	0.31	60
25	0.4	58	25	0.32	36
26	0.45	43	26	0.35	47
27	0.34	34	27	0.3	30
28	0.32	27	28	0.14	35
29	0.3	39	29	0.36	41
30	0.67	77	30	0.27	No Data