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| **Module:** | ST4400 |
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| **Student Number:** | 120224791 |
| **Chapter:** | 4 |

**Maximum 2 pages! Do not delete the page number in the footer.**

**A)** Yi = β0 + β1Xi + ei

Text

Description automatically generated

Chart

Description automatically generated

|  |  |
| --- | --- |
| Scatter-plot: | Linear & constant variance |
| Residual Vs Fitted Values: | Linear & constant variance |
| Histogram: | Non-normal slightly skewed right |
| Normal Probability Plot: | Minor departures – approximately normal |

log(Yi) = β0 + β1Xi + ei

Graphical user interface, text

Description automatically generated



Chart, scatter chart

Description automatically generated

|  |  |
| --- | --- |
| Scatter-plot: | Linear & constant variance |
| Residual Vs Fitted Values: | Linear & constant variance |
| Histogram: | Non-normal slightly skewed left |
| Normal Probability Plot: | Departures – non-normal |

sqrt(Yi) = β0 + β1Xi + ei

Text

Description automatically generated

Chart

Description automatically generated

|  |  |
| --- | --- |
| Scatter-plot: | Linear & constant variance |
| Residual Vs Fitted Values: | Linear & constant variance |
| Histogram: | Approximately Normal |
| Normal Probability Plot: | Minor departures – non-normal |

**B)** The model I would choose for this data is the third model sqrt(Yi) = β0 + β1Xi + ei, as it best satisfies the normality assumption.

**C)** Further models should be explored as normal residuals for Histograms and normality in the Normal Probability Plot might be improved upon.