

Police Radar Analysis

A police radar unit measured the speeds, in kilometres per hour, of 70 cars travelling along a straight stretch of highway in Ontario. The speed limit on this highway is 100 km/h. The speeds of the 70 cars are listed below.

115	95	95	103	91	105	124	92
111	128	112	128	113	103	105	114
116	120	107	108	118	103	113	110
108	119	114	111	94	92	118	111
103	118	104	103	118	114	115	95
126	106	92	120	122	112	100	129
120	130	115	96	111	97	98	115
141	114	118	117	104	105	107	103
122	98	117	110	113	95		

Analysis:

- Create a histogram of the car speeds using an online application or similar software. Adjust the Bin Intervals to a suitable size and adjust the x and y axes.
- Copy and paste the histogram into a document. Your document must have headers, page numbers, a title, an introduction to the analysis, include a figure caption on the graph, answers to the questions. Use, if available, an equation editor to show calculations of percentages.
- Determine the number of cars that are speeding and the number that are not speeding. In a spreadsheet (e.g. Excel/Google Sheets) create a column graph displaying the number of cars that are speeding and not speeding. Also, determine the percent of cars that are speeding and make a pie chart of this. Include this in your mini-report.

Questions:

1. What was the most frequent speed that the cars were travelling at?
2. What was the least frequent speed that the cars were travelling at?
3. Using the graph determine/estimate the number of cars that were speeding.
4. Using Fathom (see directions on the web site), calculate the average (mean) speed of the cars on the highway. Does this average value coincide with the most frequent speed from the graph? Is it close? Explain. Determine the percentage of the 70 cars that were speeding and that were not speeding.
5. Why is viewing this data in histogram form more beneficial than simply looking at the raw data in the table?
6. How might this data be useful for police officers or the provincial government when making or passing legislation on road safety in Ontario? Is this enough data to make conclusions about?