CE 45000: Transport Policy and Planning
Homework 1
Due: Thuraday, September 6, 2018

1) Using dataset 1, create a table showing percentage of miles and Vehicle Miles Travelled by Functional System.

Table 1: Summary of Miles by Functional Classification of Roadways

Functional Classification of Roadways	Total Length	Percentage
Arterial	15.4	15%
Collector	36.1	35%
Local	52	50%
Grand Total	**103.5**	**100%**

VMT is calculated by multiplying the amount of daily traffic on a roadway segment by the length of the segment

Table 2: Summary of Vehicles Miles Travelled (VMT) by Functional Classification of Roadways

Functional Classification of Roadways	Total Length	Percentage
Arterial	2,504	14%
Collector	8,422	46%
Local	7,369	40%
Grand Total	**18,295**	**100%**

2) Using dataset 2, summarize the total miles by functional classification.

Table 3: Summary of Miles by Functional Classification of Roadways

Functional Classification of Roadways	Total Length	Percentage
Interstate	3,118,812	2.0%
Local	104,009,880	65.5%
Major Collector	21,478,222	13.5%
Minor Arterial	9,036,751	5.7%
Minor Collector	15,225,116	9.6%
Principal Arterial - Other	5,261,480	3.3%
Principal Arterial - Other Freeways or Expressways	724,000	0.5%
Grand Total	**158,854,261**	**100.0%**

3) Using dataset 3, show detail calculations of following parameters:
   a. Average daily traffic
   b. 50% speed
   c. 85% speed
   d. Average speed
   e. Peak hour traffic counts

a) ADT: 53
b) 50% Speed: 25 mph
c) 85% speed: 31 mph

Table 4: Calculation of 50% and 85% Speed

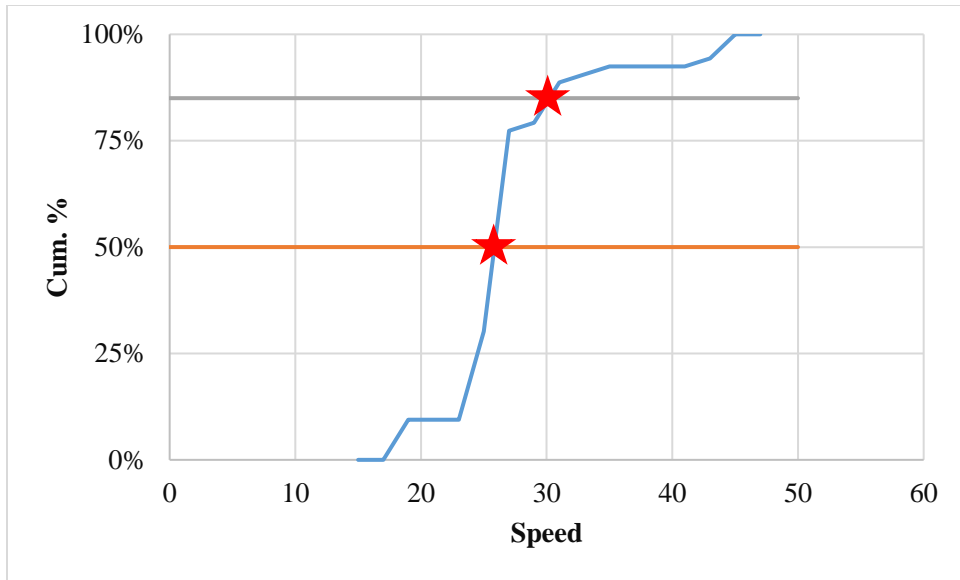| Bin	Frequency	% Freq. in Group	Cum. %
15	0	0%	0%
17	0	0%	0%
19	5	9%	9%
21	0	0%	9%
23	0	0%	9%
25	11	21%	30%
27	25	47%	77%
29	1	2%	79%
31	5	9%	89%
33	1	2%	91%
35	1	2%	92%
37	0	0%	92%
39	0	0%	92%
41	0	0%	92%
43	1	2%	94%
45	3	6%	100%
47	0	0%	100%

Figure 1: 50% and 85% Speed

d) Average speed: 26.705 mph
e) Peak hour traffic counts: 9 for 70 am to 8 am, 9 for 6 pm to 7 pm