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Highway & Traffic Engineering

Learning Activities: SPOT SPEED STUDIES

by

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QUESTION 1

Following are the speed data obtained on a Standard R5 road in the State of Selangor during speed study.

Car No.	Speed (km/h)	Car No.	Speed (km/h)	Car No.	Speed (km/h)	Car No.	Speed (km/h)
1	35.1	18	43.9	35	45.8	52	47.7
2	44.0	19	45.5	36	50.7	53	46.7
3	45.8	20	56.9	37	52.1	54	45.6
4	44.3	21	67.5	38	49.4	55	44.3
5	36.3	22	55.9	39	53.2	56	51.6
6	45.0	23	54.3	40	47.7	57	35.9
7	50.1	24	45.8	41	53.1	58	37.6
8	46.7	25	43.1	42	51.3	59	38.6
9	46.9	25	55.5	43	52.3	60	45.3
10	51.4	27	40.0	44	53.3	61	53.6
11	55.7	28	56.8	45	49.6	62	45.8
12	53.3	29	54.5	46	48.4	63	54.9
13	54.1	30	44.6	47	49.0	64	58.7
14	40.1	31	45.9	48	51.6	65	51.3
15	45.9	32	54.6	49	52.6	66	49.0
16	56.9	33	34.9	50	60.6	67	47.8
17	43.6	34	51.0	51	60.3	68	57.8

Using common descriptive statistics, determine.

- i. Arithmetic Mean Speed
- ii. Median speed
- iii. Modal Speed
- iv. Standard Deviation

QUESTION 2

Results of a spot speed study conducted on a local street in a residential neighborhood for duration of one hour is shown in table below. With a class interval of 4.9km/hr and the starting speed of 20km/hr:

Speed Class (km/hr)	No.of vehicles
20-24.9	2
25-29.9	3
30-34.9	2
35-39.9	5
40-44.9	3
45-49.9	11
50-54.9	4
55-59.9	18
60-64.9	7
65-69.9	8
70-74.9	11
75-79.9	5
80-84.9	2
85-89.9	2
90-94.9	2
95-99.9	1

From the data:

- i. Plot the Frequency Cumulative Curve.
- ii. Determine the median and the 85th percentile.
- iii. Suggest an appropriate speed limit for the road section and justify your choice.

END OF QUESTION