Sheet No (7) trip generation –transportation planning

(1) For a transportation zone located in the city center, the expected areas of different activities are as follows:

Residential area = 1675000 ft^2

Service area = 1800000 ft^2

Commercial area = 915000 ft^2

Governmental and Public Buildings = 1800000 ft^2

Using the following data table, calculate the number of trips generated in this area in the future.

Land- Use Category	trip per thousand square feet
Residential area	2.4
Service area	5.2
Commercial area	1.2
Governmental and Public Buildings	39

(2) An origin- destination survey in 8 residential travel-analysis zones provided the following data relating to number of population (in hundreds) and daily trip productions.

Trips	350	450	740	550	400	661	525	700
Population(100)	50	105	340	165	120	180	150	300

Calibrate,plot and evaluate a model of the form: $Y=a_0+a_1x$

If the expected population in zone no. eight will be 50000, calculate the expected no. of trips from this zone in the future.

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(3) In a base year trip generation study the following data were obtained:

Y	*3.5*	*6.5*	*4*	*2.2*
X	*30.0*	*10.0*	*50.0*	*70.0*

where:

Y = the daily person trip productions per dwelling unit;

and X= residential density per acre (dwelling units per acre).

- *Calibrate the relationship:* $Y=a_0+a_1x$
- *Calculate the coefficient of determination (* R^2 *).*

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(4) the following table shows the relation between households and avg.number of trips:

Veh./H.H / *Person/H.H*	*0*	*1*	*2*	*≥3*
1	*2.1*	*2.7*	*2.9*	*2.8*
2	3.7	6.2	7.5	11.4
≥ 3	6.0	8.6	9.4	12.6

and the following table shows number of households in future:

Person/H.H	1	2	*≥3*
NO. of H.H	200	550	50

If 10% of H.H don't have veh. & 60% Of H.H have one veh.& 20% Of H.H have two veh. and 10% of H.H have more than two veh.

Find the number of trip in future.