Sheet No (8)   trip Distribution

(1) An **urban** area consisting of **four** zones has the base –year **O-D** matrix and the future generated trips as shown in **Table 1**. Find the future **O-D** matrix using the following methods:

- **Uniform growth factor**

- **Average growth factor (Do just two iterations)**

From / To	1	2	3	4	Future total
1	-	20	50	15	255
2	20	-	30	5	105
3	50	30	-	40	220
4	15	5	40	-	120
Future total	255	105	220	120	700

(2) An **urban** area consisting of **three** zones has the base –year **O-D** matrix and the future generated trips as shown in the following Table . Find the future **O-D** matrix using the **Frater** methods:

O / D	A	B	C	O_i^f
A	-	300	200	900
B	200	-	150	600
C	400	500	-	2100
D_j^f	650	1300	600	

(3) A study area consists of **three** zones , The data have been determined as shown in the following tables. Assume **kij=1**.

Table 1:Zone productions and attractions .

Zone	1	2	3	total
Trip production	140	330	280	750
Trip Attraction	300	270	180	750

Table 2:Travel Time between Zones (min)

Zone	1	2	3
1	5	2	3
2	2	6	6
3	3	6	5

Determine the number of trips between Zones using the **gravity model** formula and the data given above (**proceed for two iterations**)

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(4) Given Present (O/D) matrix for travel and future trip estimated:

O / D	A	B	C	Totals
A	-	20	15	35
B	20	-	30	50
C	15	30	45	2100
Future trips	70	75	135	

It is required to get future O/D matrix using:

(a) Uniform growth factor model,

(b) Average growth factor model,

(c)Frater model.