The region in program II has made changes to the road system described there. In each town is a traffic light and traffic going through a town takes one of two or three routes out of the town, depending on the traffic light. The lights have been retimed so that one route out of town does not dominate.

In addition, they have discovered that a car does not travel from one town to the next in exactly the same amount of time each time, but the time can vary uniformly randomly one minute greater than or less than the amount specified below.

Also, they have discovered that each day about 1000 cars travel from A to P, so they want to find averages and standard deviations based on 1000 cars a day.

If a car enters town A, it moves to B or C, then to D, E, or F, and proceeds through the network reaching P. The car leaves one town going to any of the destination towns according to probabilities in the following table:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A		.4	.6													
B				.4	.6											
C					.5	.5										
D							.4	.6								
E								.6	.4							
F									.6	.4						
G											.6	.4				
H											.4	.3	.3			
I												.5	.5			
J													1.			
K														1.		
L														.4	.6	
M															1.0	
N																1.0
O																1.0
P																

The time to drive the roads between towns in minutes is given in the table below:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A		5	6													
B				4	7											
C					4	6										
D							4	6								
E								6	4							
F									4	7						
G											4	6				
H											4	8	8			
I												6	4			
J													5			
K														4		
L														5	6	
M															5	
N																5
O																5
P																

Write a program to simulate traffic flow with 1000 cars. Calculate the average transit time from A to P and calculate the standard deviation.

Run this program 10 times and compute the average transit time for 00,000 cars and the standard deviation.

Compare the 10 runs of 1000 with the one run of 10,000.