Entraînement - Training

INSTRUCTION : *English version below*

En haut de chaque page se trouvent 3 nombres, par exemple +1/3/58+. Vous ***devez*** *vérifier que, sur chacune des pages de votre sujet, le* ***premier*** *de ces 3 nombres est le même (dans cet exemple, il s'agit donc du 1). Ce nombre identifie votre copie. Les deux autres nombres ne sont pas importants.*

Détacher la dernière feuille et répondre dessus. Ne pas rendre les pages contenant les questions, vous ne devez rendre ***que la dernière feuille****. Chaque question est sur 1 point, aucun point ne sera attribué aux questions contenant une mauvaise réponse.*

Les questions faisant apparaître le symbole ♣ peuvent présenter une ou plusieurs bonnes réponses qui doivent toutes être cochées. Les autres ont une unique bonne réponse.

At the top of each page are written 3 numbers, +1/3/58+. You ***must*** *check that, on each page you have, the* ***first*** *number is the same (in this case, it would be the number 1). This number is the id of your subject. The two other numbers are not important.*

Answer only on the last page. Keep the other pages containing the questions, you just have to return ***the last page****. Each right answer gives you 1 point. For any wrong answer, the mark of the question is 0.*

If there is a question with a symbol ♣, there may be one or more right answer. All of them must be checked. Any other question has only one right answer.

Question 1

We consider a queue where 3398.4 people arrive each heure and where 21.18 people leave each minute. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.16	3 0.83	5 0.10	7 0.73	9 -
2 0.68	4 0.95	6 0.23	8 1.00	10 0.29

Question 2

We consider a queue where 0.537 people arrive each seconde and where 1407.6 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 1.50	3 0.67	5 1.49	7 0.63	9 0.53
2 0.72	4 -	6 1.41	8 0.73	10 0.97

Question 3

We consider a queue where 0.498 people arrive each seconde and where 853.2 people leave each heure. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.73	3 -	5 0.96	7 0.20	9 0.91
2 0.95	4 0.54	6 0.72	8 0.30	10 0.50

Question 4

We consider a queue where 46.56 people arrive each minute and where 1602.0 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 3.44	3 3.34	5 2.83	7 2.64	9 -
2 3.17	4 2.50	6 2.87	8 3.49	10 2.86

Question 5

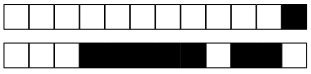
We consider a queue where 0.372 people arrive each seconde and where 18.36 people leave each minute. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.74	3 0.23	5 0.47	7 0.27	9 0.42
2 0.52	4 0.85	6 0.16	8 0.44	10 -

Question 6

We consider a queue where 50.34 people arrive each minute and where 0.11 people leave each seconde. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 6.14	3 5.78	5 6.21	7 5.86	9 6.11
2 5.61	4 6.46	6 5.94	8 5.64	10 -



Question 7

We consider a queue where 0.239 people arrive each seconde and where 3430.8 people leave each heure. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.97	3 0.43	5 0.09	7 0.75	9 0.01
2 -	4 0.37	6 0.29	8 0.65	10 0.28

Question 8

We consider a queue where 17.46 people arrive each minute and where 2386.8 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.44	3 -	5 1.01	7 1.11	9 0.62
2 0.79	4 0.90	6 0.95	8 0.78	10 0.99

Question 9

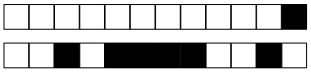
We consider a queue where 0.305 people arrive each seconde and where 21.54 people leave each minute. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.58	3 0.76	5 0.00	7 -	9 0.55
2 0.38	4 0.75	6 0.15	8 0.05	10 0.93

Question 10

We consider a queue where 1778.4 people arrive each heure and where 0.955 people leave each seconde. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

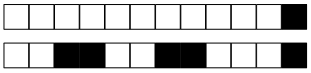
1 1.56	3 1.46	5 1.34	7 0.72	9 1.37
2 -	4 1.13	6 0.61	8 0.67	10 1.07



Question 11

We consider a queue where 34.14 people arrive each minute and where 990.0 people leave each heure. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.21	3 0.14	5 0.95	7 0.50	9 0.09
2 0.39	4 0.84	6 -	8 0.07	10 0.94



Question 12

We consider a queue where 32.34 people arrive each minute and where 2674.8 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 2.20	3 2.51	5 -	7 2.52	9 2.59
2 2.26	4 2.34	6 2.64	8 2.39	10 2.97

Question 13

We consider a queue where 9.78 people arrive each minute and where 0.413 people leave each seconde. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.16	3 0.61	5 0.07	7 0.68	9 0.73
2 0.26	4 0.04	6 0.11	8 -	10 0.82

Question 14

We consider a queue where 0.957 people arrive each seconde and where 2178.0 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

[1] 0.74	[3] 1.50	[5] 0.80	[7] 0.78	[9] 1.10
[2] 1.15	[4] 0.64	[6] -	[8] 1.48	[10] 1.29

Question 15

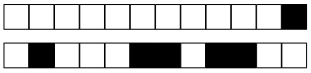
We consider a queue where 802.8 people arrive each heure and where 18.42 people leave each minute. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.63	3 0.22	5 0.06	7 -	9 0.84
2 0.53	4 0.49	6 0.77	8 0.27	10 0.13

Question 16

We consider a queue where 1713.6 people arrive each heure and where 45.84 people leave each minute. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 1.17	3 1.49	5 1.65	7 1.84	9 1.76
2 2.04	4 1.96	6 1.80	8 1.79	10 -



Question 17

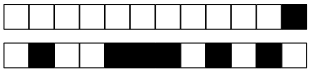
We consider a queue where 0.589 people arrive each seconde and where 1292.4 people leave each heure. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.20	3 0.14	5 -	7 0.46	9 0.19
2 0.94	4 0.38	6 0.15	8 0.05	10 0.96

Question 18

We consider a queue where 30.54 people arrive each minute and where 1648.8 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 8.95	3 8.70	5 8.57	7 -	9 9.16
2 8.80	4 8.56	6 8.77	8 9.34	10 9.32



Question 19

We consider a queue where 921.6 people arrive each heure and where 0.607 people leave each seconde. What is the probability that there is 0 people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

1 0.49	3 0.57	5 0.41	7 0.40	9 0.52
2 0.12	4 0.54	6 -	8 0.30	10 0.58

Question 20

We consider a queue where 0.425 people arrive each seconde and where 630.0 people leave each heure. What is the mean number of people in the queue in the stationnary distribution ? If the question makes no sense, answer "-".

[1] 4.60	[3] 4.93	[5] 5.19	[7] 4.50	[9] 5.14
[2] 4.57	[4] 4.59	[6] 4.98	[8] -	[10] 4.79

Entraînement - Training

Noircissez complètement ci-dessous les 3 premières lettres de votre nom de famille et la première lettre de votre prénom. Par exemple, pour Jean Dupont, cochez J, D, U, P ; pour Henri Harley, cochez seulement H, A, R ; pour Bernard Ca, cochez seulement A, B, C.

Check entirely the 3 first letters of your lastname and the first letter of your firstname. For instance, for Jean Dupont, check J, D, U, P ; for Henri Harley, check only H, A, R ; for Bernard Ca, check only A, B, C.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Then write your lastname and firstname below.

Nom et prénom :

.....

Les réponses aux questions sont à donner exclusivement sur cette feuille. Les réponses données sur les feuilles précédentes ne seront pas prises en compte. Pour cocher une case, il faut la **noircir complètement**. Vous pouvez effacer votre réponse à la gomme ou avec du blanc, attention à ne pas effacer la case à cocher. Si vous êtes dans l'impossibilité de corriger une erreur, cette page est dupliquée au verso ; vous pouvez alors barrer cette feuille ci et répondre au verso.

Question 1 :	1	2	3	4	5	6	7	8	9	10
Question 2 :	1	2	3	4	5	6	7	8	9	10
Question 3 :	1	2	3	4	5	6	7	8	9	10
Question 4 :	1	2	3	4	5	6	7	8	9	10
Question 5 :	1	2	3	4	5	6	7	8	9	10
Question 6 :	1	2	3	4	5	6	7	8	9	10
Question 7 :	1	2	3	4	5	6	7	8	9	10
Question 8 :	1	2	3	4	5	6	7	8	9	10
Question 9 :	1	2	3	4	5	6	7	8	9	10
Question 10 :	1	2	3	4	5	6	7	8	9	10
Question 11 :	1	2	3	4	5	6	7	8	9	10
Question 12 :	1	2	3	4	5	6	7	8	9	10
Question 13 :	1	2	3	4	5	6	7	8	9	10

Question 14 : 1 2 3 4 5 6 7 8 9 10

Question 15 : 1 2 3 4 5 6 7 8 9 10

Question 16 : 1 2 3 4 5 6 7 8 9 10

Question 17 : 1 2 3 4 5 6 7 8 9 10

Question 18 : 1 2 3 4 5 6 7 8 9 10

Question 19 : 1 2 3 4 5 6 7 8 9 10

Question 20 : 1 2 3 4 5 6 7 8 9 10