

## ΟΥΡΕΣ ΑΝΑΜΟΝΗΣ

Προαιρετικά μπορείτε να χρησιμοποιήσετε κάποιον από τους τύπους (προσέχοντας ιδιαίτερα τους συμβολισμούς)

$$\mu_A = \frac{1}{\lambda} \quad \mu_S = \frac{1}{\mu} \quad \rho = \frac{\lambda}{\mu} \quad L = \frac{\rho}{1-\rho} = \frac{\lambda}{\mu-\lambda} \quad W = \frac{L}{\lambda} = \frac{1}{\mu} \cdot \frac{1}{1-\rho} \quad W_q = W - \mu_S$$

$$W = W_q + \mu_S$$

$$W_q = W - \mu_S = \frac{1}{\mu} \cdot \frac{\rho}{1-\rho} = \frac{\lambda}{\mu(\mu-\lambda)} = \frac{L}{\mu}$$

$$L = W_q \cdot \mu = \frac{W_q}{\mu_S}$$

$$L_q = \lambda W_q = \frac{W_q}{\mu_A} = \frac{\rho^2}{1-\rho} = \frac{\lambda^2}{\mu(\mu-\lambda)} = \rho L$$

ΕΜΠ  
ΣΕΜΦΕ

ΕΠΙΧΕΙΡΗΣΙΑΚΗ  
ΕΡΕΥΝΑ

## ΤΥΠΟΛΟΓΙΟ

ΚΟΛΕΤΣΟΣ ΓΙΑΝΝΗΣ

### Multiples Channels M/M/1

### Έλεγχος Αποθεμάτων

$$TC = \text{Ordering Cost} + \text{Carrying Cost} = \frac{D}{Q}K + \frac{Q}{2}K_c$$

$$EOQ = Q = \sqrt{\frac{2KD}{K_c}}$$

$$F(R) = 1 - \frac{QK_c}{DK_u}$$

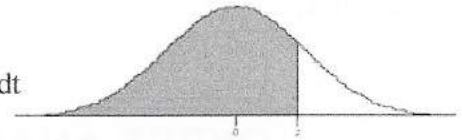
Συντελεστής επιβάρυνσης του συστήματος	Αριθμός εξυπηρετητών, c					
	c=1	c=2	c=3	c=4	c=5	c=10
0.10	0.1111	0.0101	0.0014	0.0002	0.0000	0.0000
0.20	0.2500	0.0417	0.0103	0.0030	0.0010	0.0000
0.30	0.4286	0.0989	0.0333	0.0132	0.0058	0.0002
0.40	0.6667	0.1905	0.0784	0.0378	0.0199	0.0015
0.50	1.0000	0.3333	0.1579	0.0870	0.0521	0.0072
0.60	1.5000	0.5625	0.2956	0.1794	0.1181	0.0253
0.70	2.3333	0.9608	0.5470	0.3572	0.2519	0.0739
0.80	4.0000	1.7778	1.0787	0.7455	0.5541	0.2046
0.90	9.0000	4.2632	2.7235	1.9694	1.5250	0.6687
0.95	19.0000	9.2564	6.0467	4.4571	3.5112	1.6512



Τυποποιημένη Κανονική Κατανομή

Standardized Normal Distribution Function

$$\Phi(z) = \int_{-\infty}^z \frac{1}{(2\pi)^{1/2}} e^{-t^2/2} dt$$



z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.5000	.5040	.5080	.5120	.5160	.5190	.5239	.5279	.5319	.5359
.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
.8	.7881	.7910	.7939	.7969	.7995	.8023	.8051	.8078	.8106	.8133
.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8513	.8554	.8577	.8529	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9215	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9492	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990