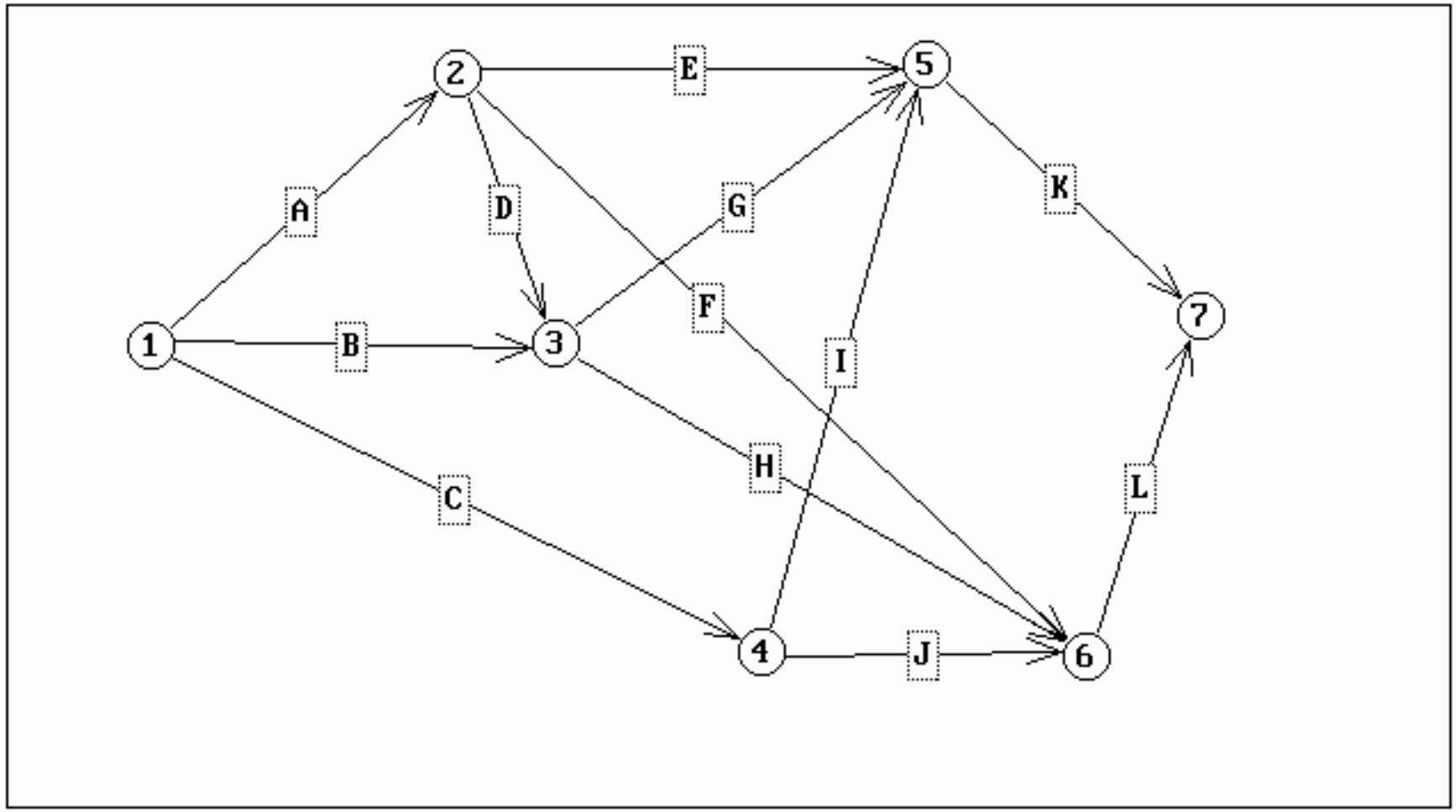
Программа PERT1.EXE

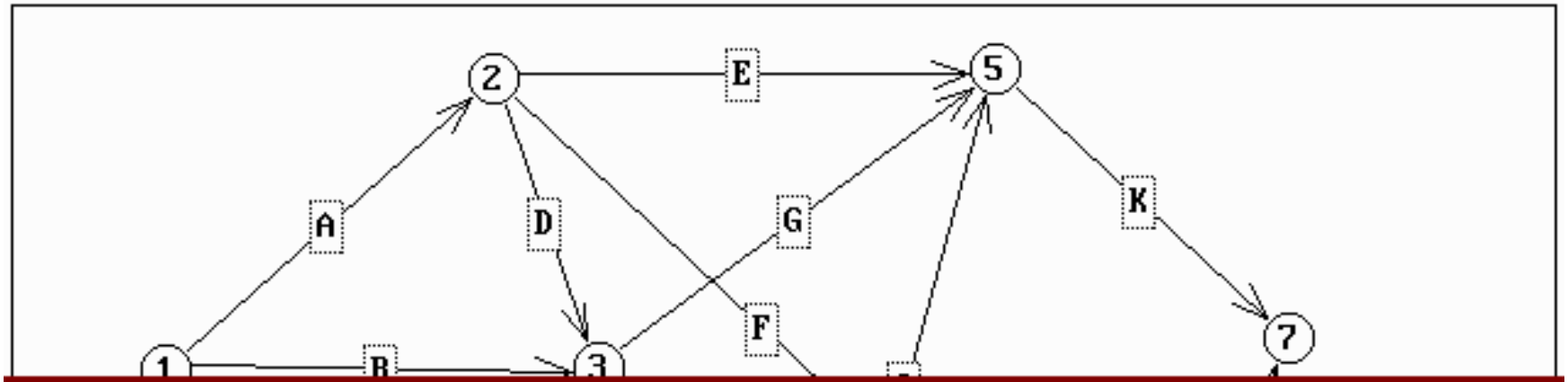
Исследование операций

с применением компьютера

Версия 2.00a (2007)

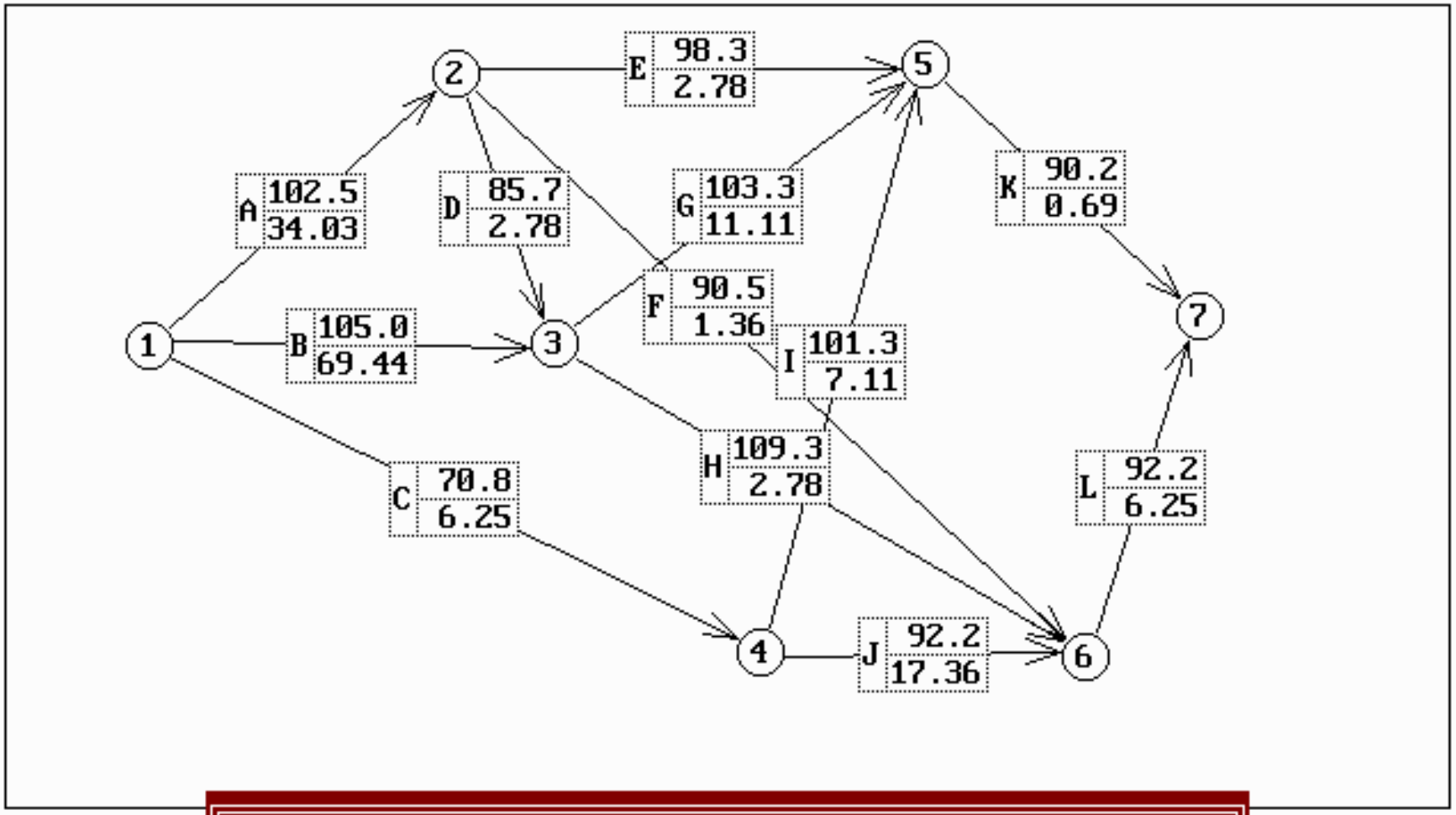

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L

PERT METHOD
Reading problem from a file



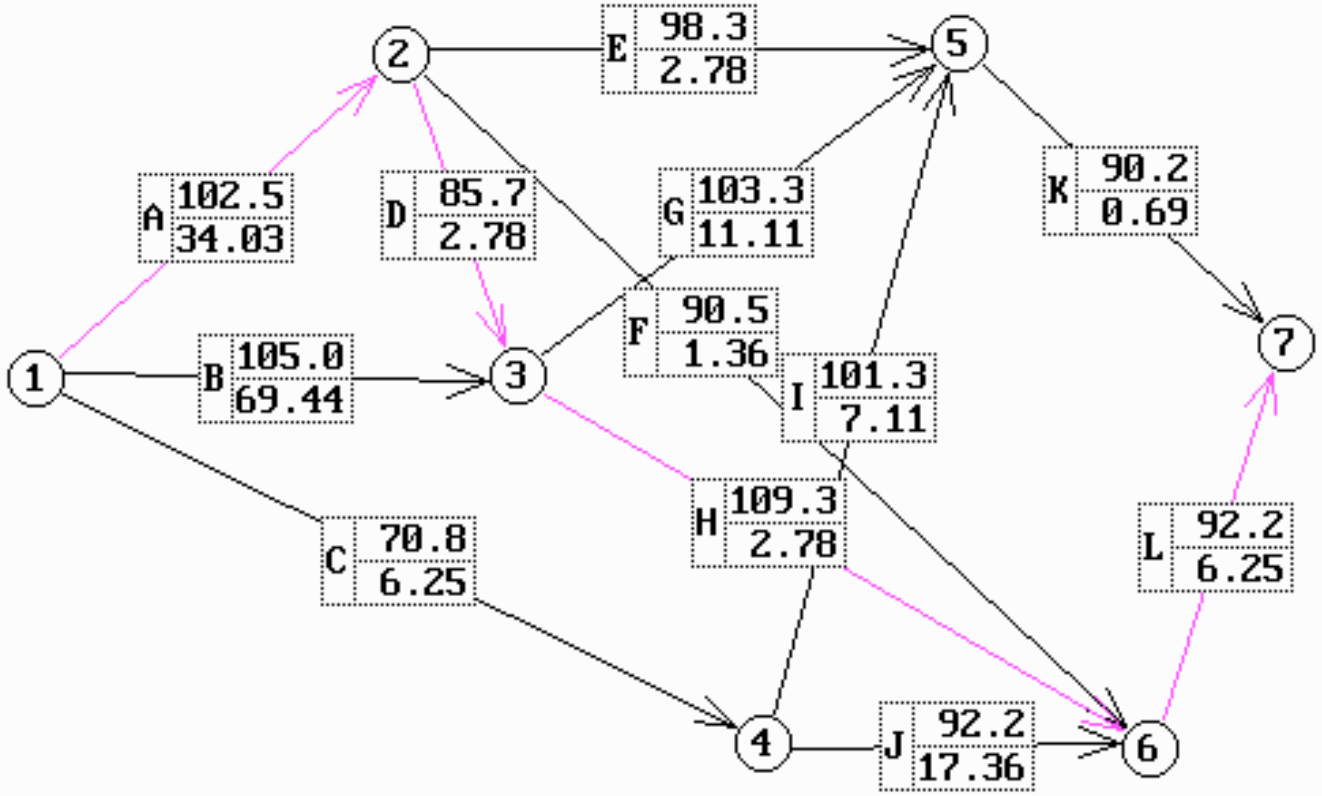
Activity	Initial event	Final event	Completion time estimations optimistic	most likely	pessimistic	Expected completion time	Completion time variance
A	1	2	90.0	100.0	125.0	102.5	34.03
B	1	3	80.0	105.0	130.0	105.0	69.44
C	1	4	65.0	70.0	80.0	70.8	6.25
D	2	3	82.0	85.0	92.0	85.7	2.78
E	2	5	90.0	100.0	100.0	98.3	2.78
F	2	6	88.0	90.0	95.0	90.5	1.36
G	3	5	100.0	100.0	120.0	103.3	11.11
H	3	6	105.0	109.0	115.0	109.3	2.78
I	4	5	94.0	101.0	110.0	101.3	7.11
J	4	6	80.0	92.0	105.0	92.2	17.36
K	5	7	88.0	90.0	93.0	90.2	0.69
L	6	7	85.0	92.0	100.0	92.2	6.25

PERT METHOD
Solving the problem



1. Expected project completion time
2. Probability of meeting project completion time
3. Project completion time for given probability
4. Exit

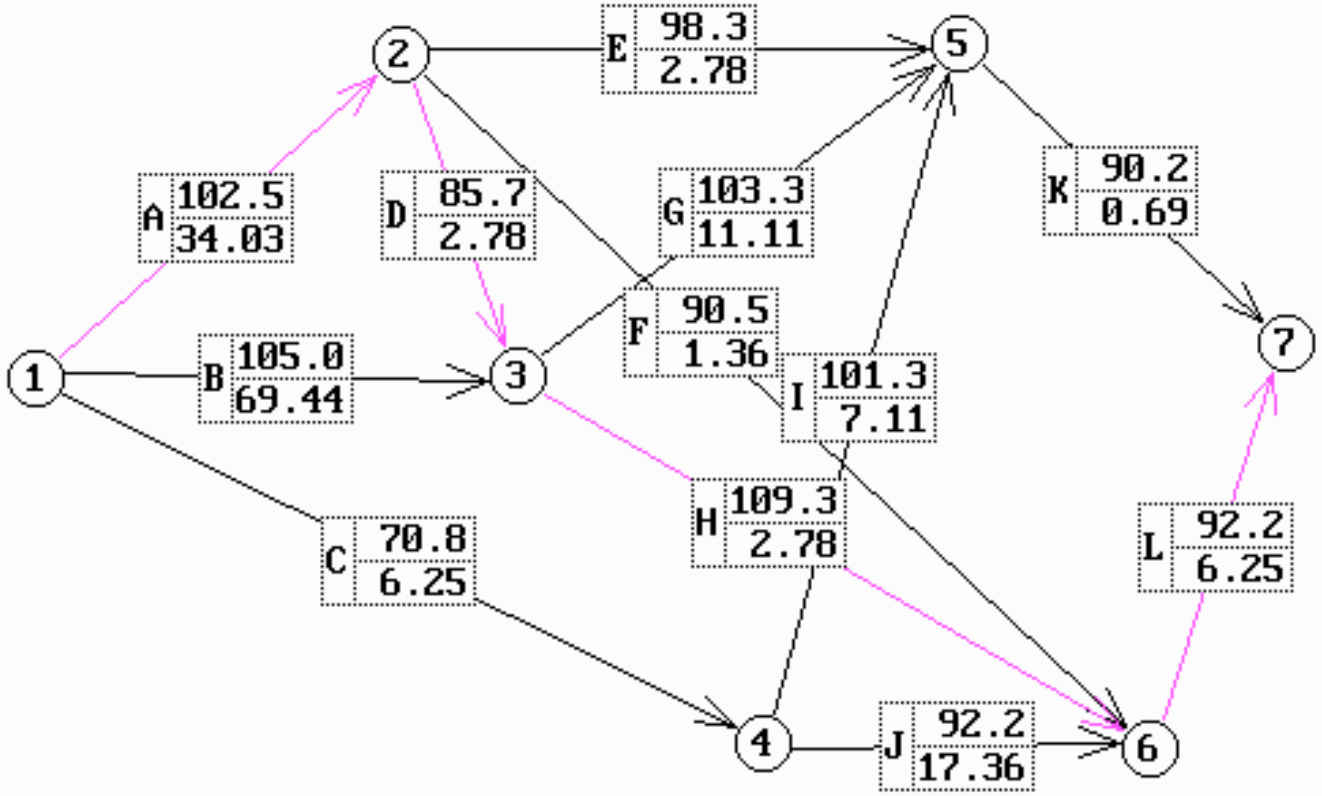
Expected project completion time



Calculate expected project completion time:

$\bar{t}$ = 102.5 + 85.7 + 109.3 + 92.2 = 389.7

Expected project completion time



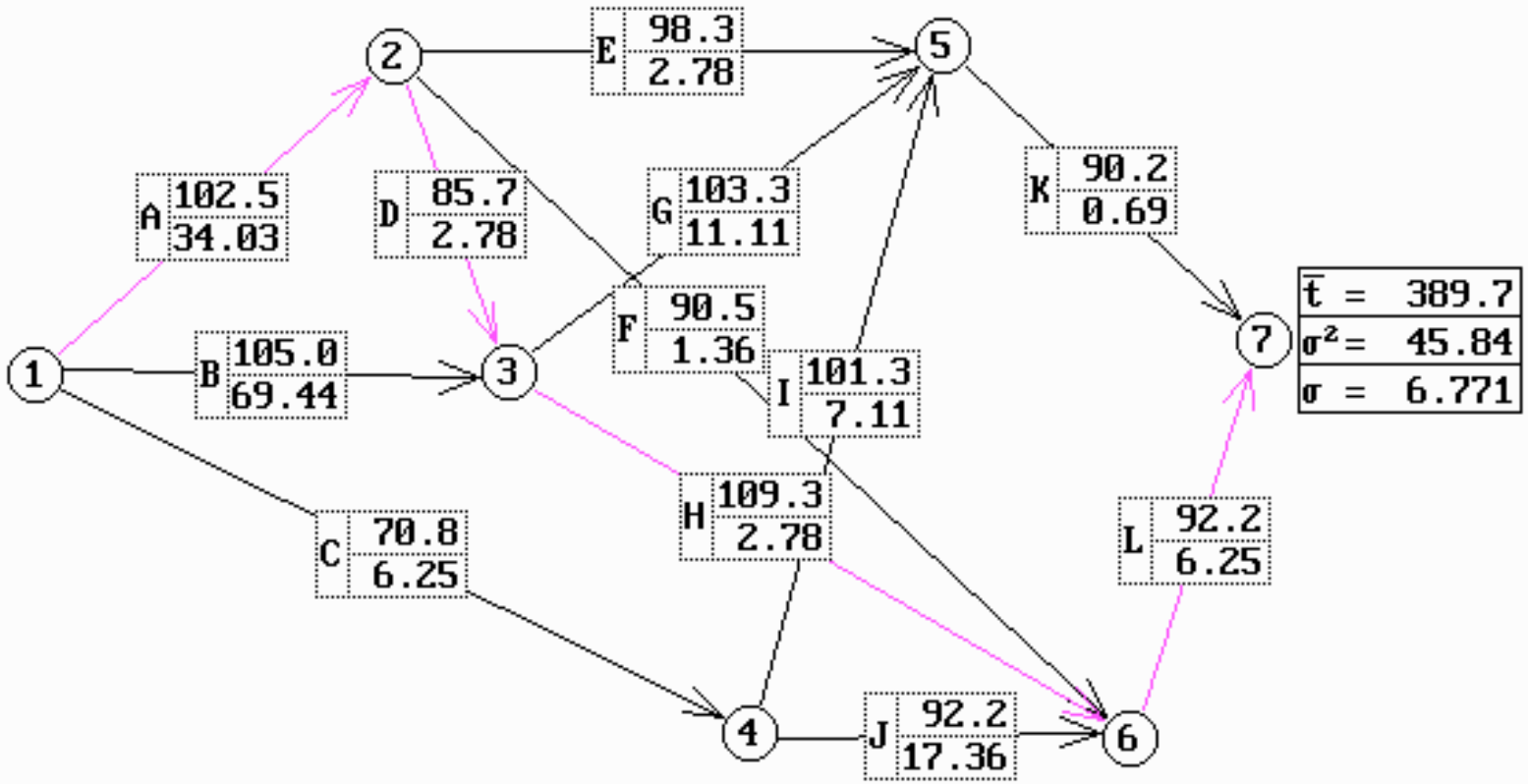
Calculate project completion time variance:

$\sigma^2 = 34.03 + 2.78 + 2.78 + 6.25 = 45.84$

PERT METHOD
Solving the problem

PERT1 /7

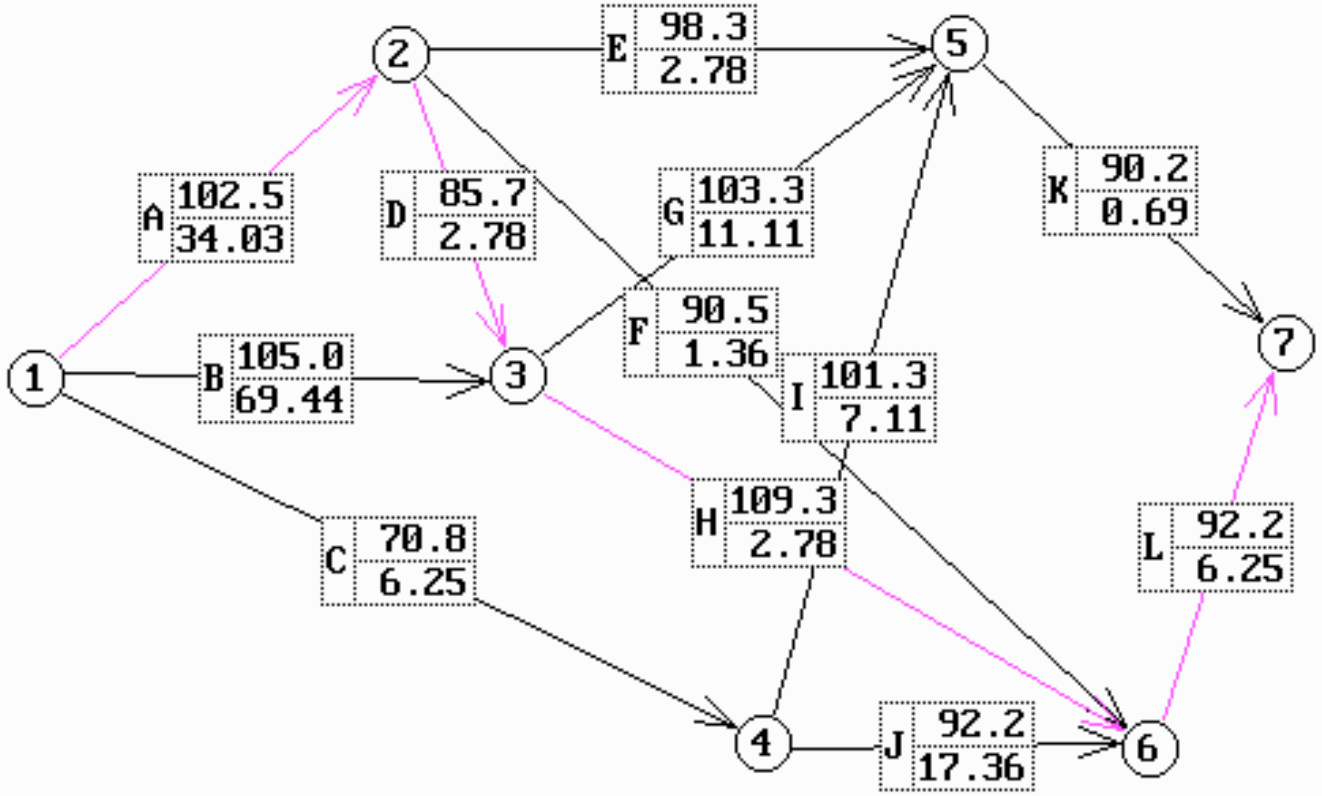
Expected project completion time



Expected project comletion time	389.7
Project completion time variance	45.84

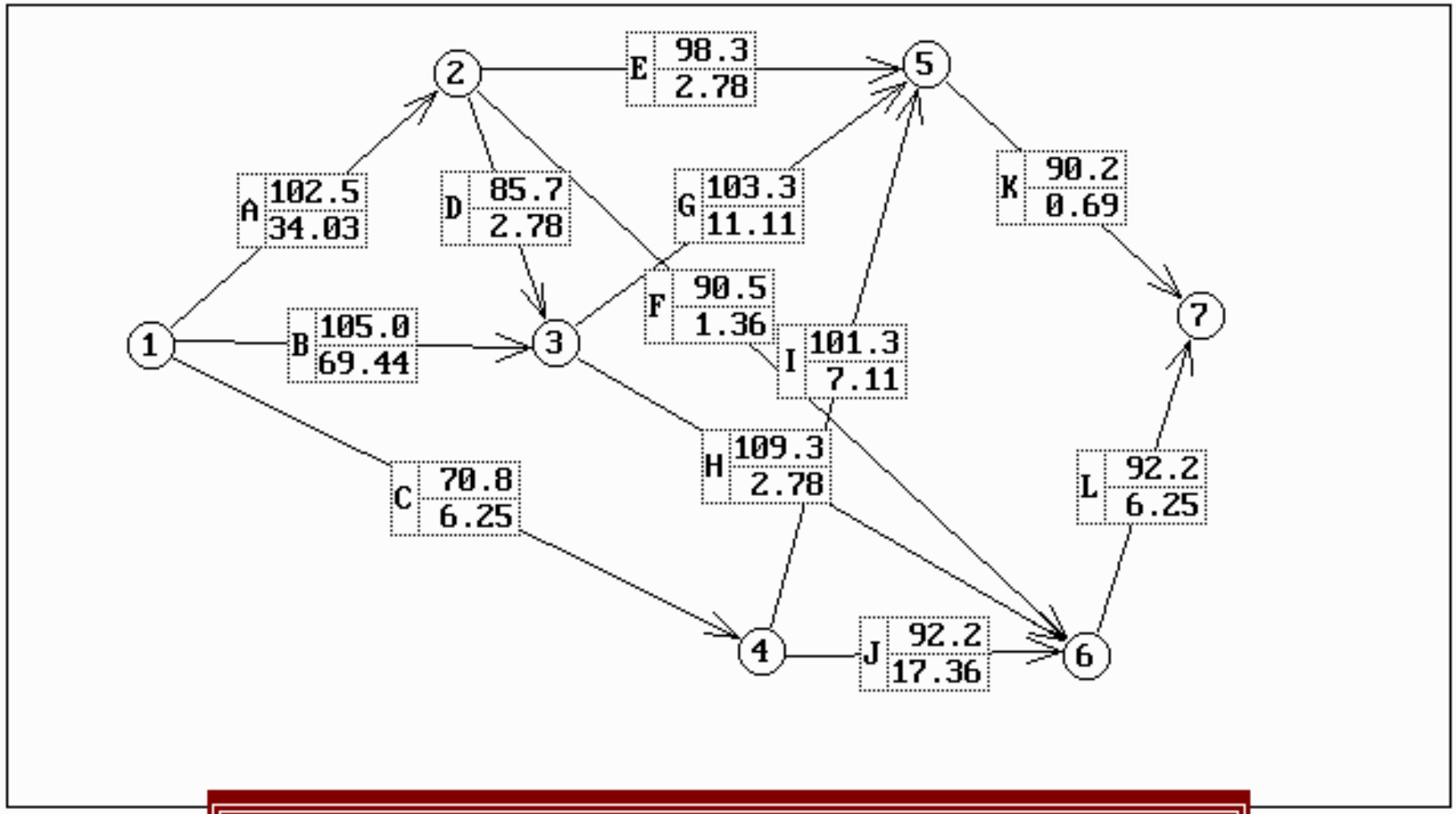
PERT METHOD
Solving the problem

Probability of meeting project completion time



Enter project completion time 398.3
(370.8 ≤ t ≤ 408.6)

1	2	3	4
5	6	7	8
9	0	.	←

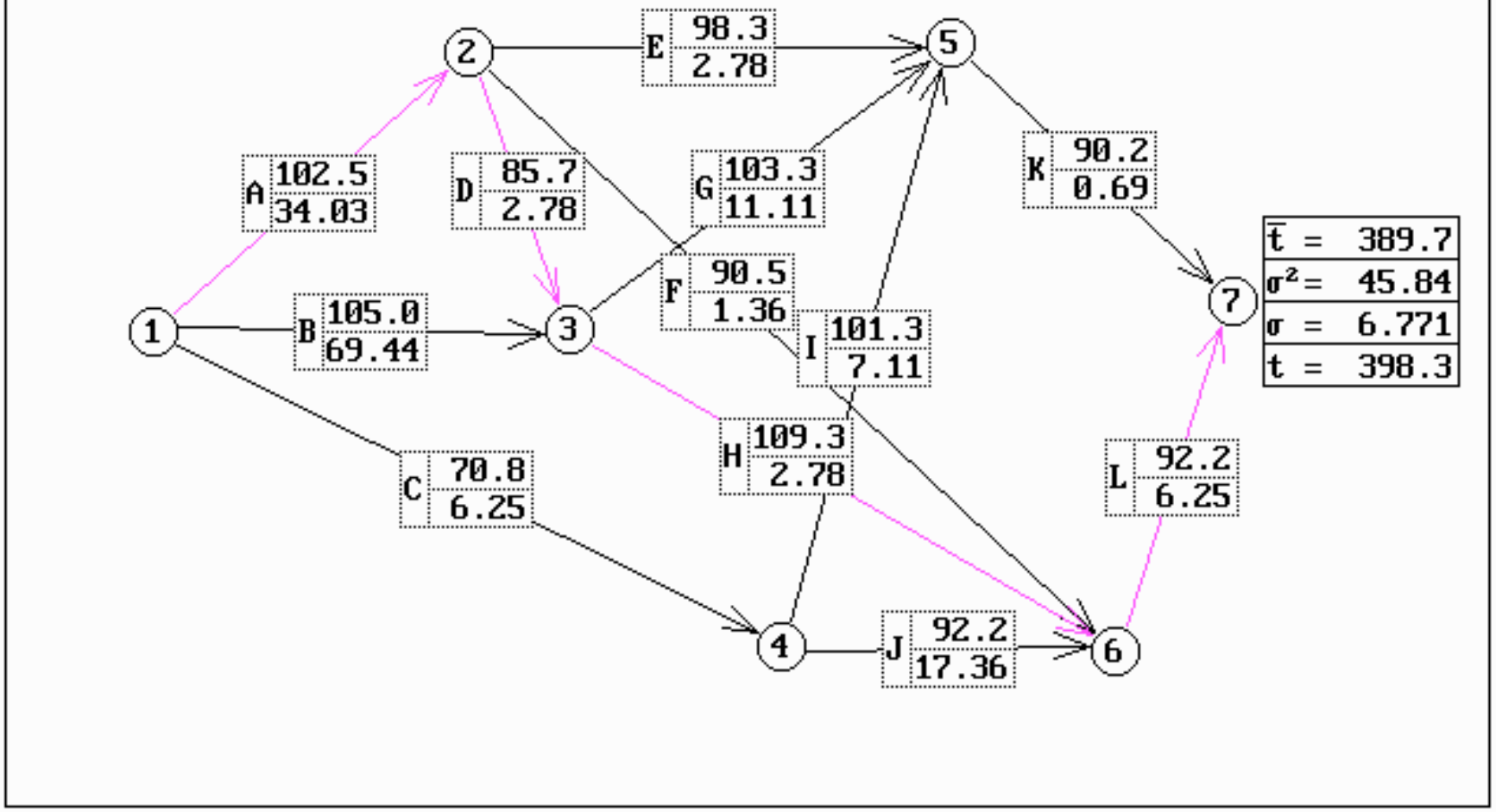


1. Expected project completion time
2. Probability of meeting project completion time
3. Project completion time for given probability
4. Exit

PERT METHOD
Solving the problem

PERT1/10

Probability of meeting project completion time



Calculate z value for normal distribution (398.3 - 389.7) / 6.771 = 1.27

Probability of meeting project completion time

CUMULATIVE NORMAL DISTRIBUTION

	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.7	0.7580	0.7611	0.7642	0.7673	0.7703	0.7734	0.7764	0.7793	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545

z value = 1.27

Select the probability

PERT METHOD
Solving the problem

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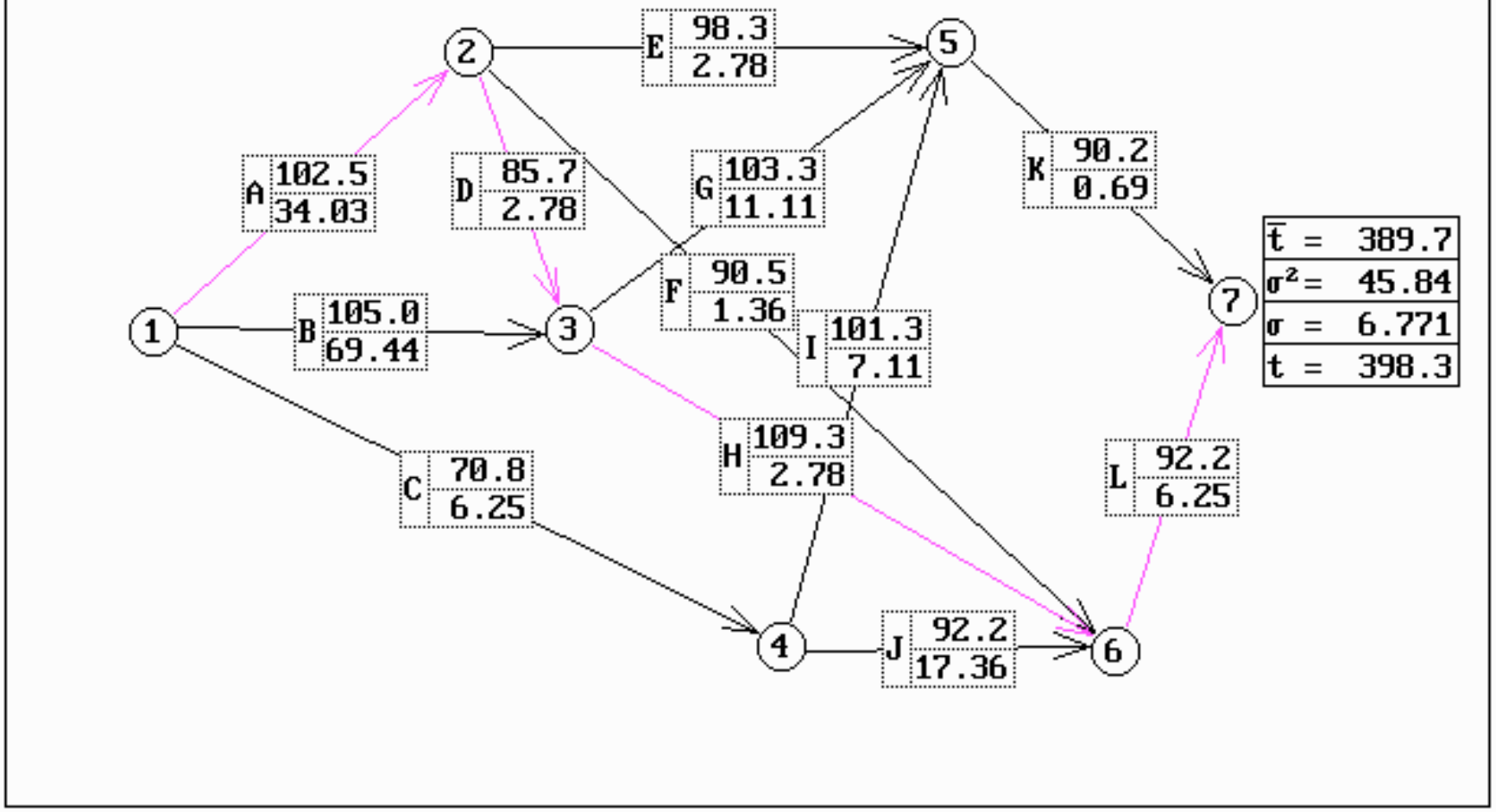
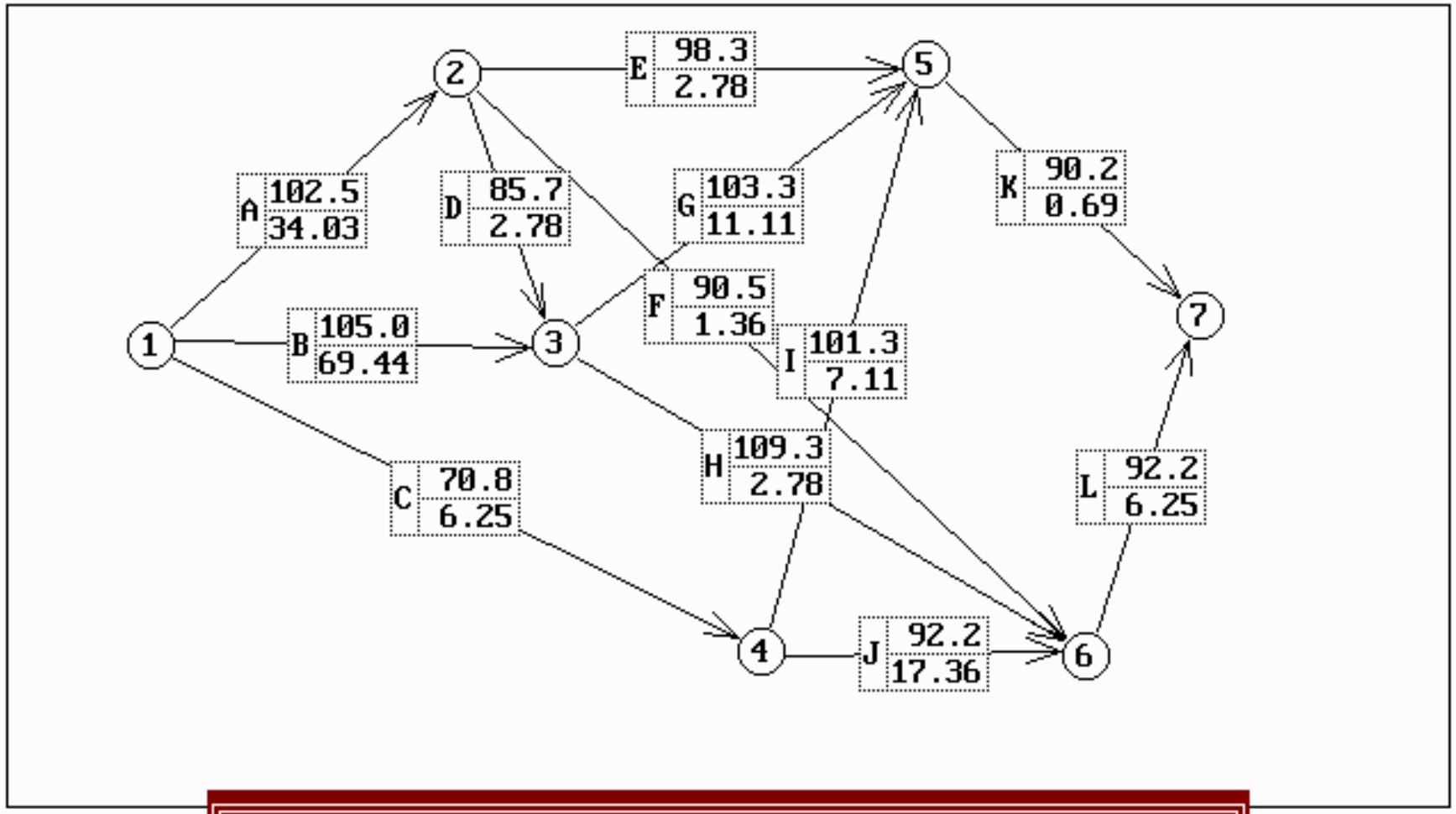
Probability of meeting project completion time



Project completion time	398.3
Probability	0.90



1. Expected project completion time
2. Probability of meeting project completion time
3. Project completion time for given probability
4. Exit

PERT METHOD
Solving the problem

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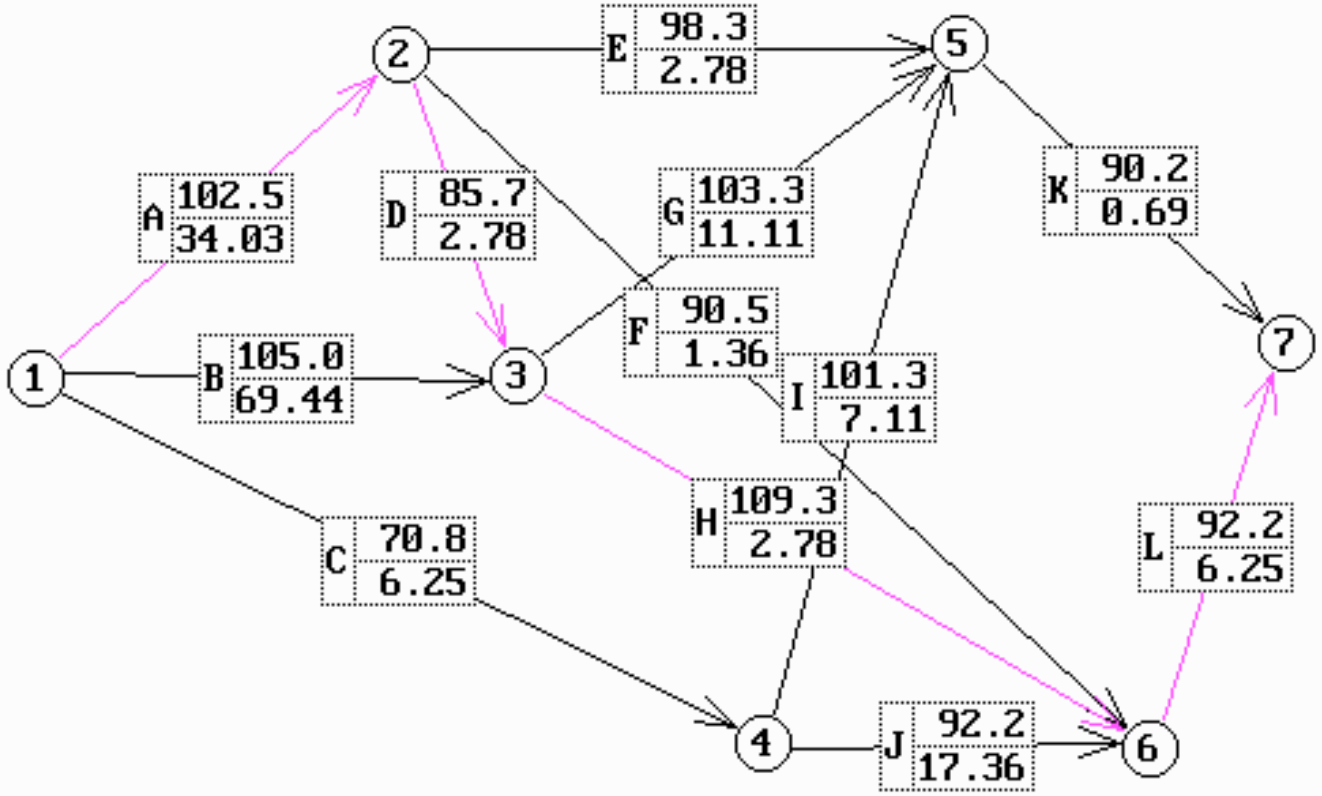
Project completion time for given probability

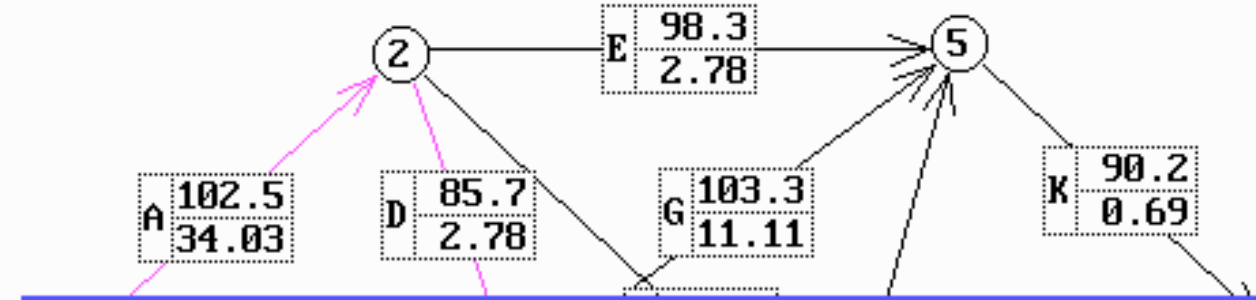


Enter probability 0.7
(0.50 ≤ p ≤ 0.99)

1 2 3 4
5 6 7 8
9 0 . ←

PERT METHOD
Solving the problem

Project completion time for given probability



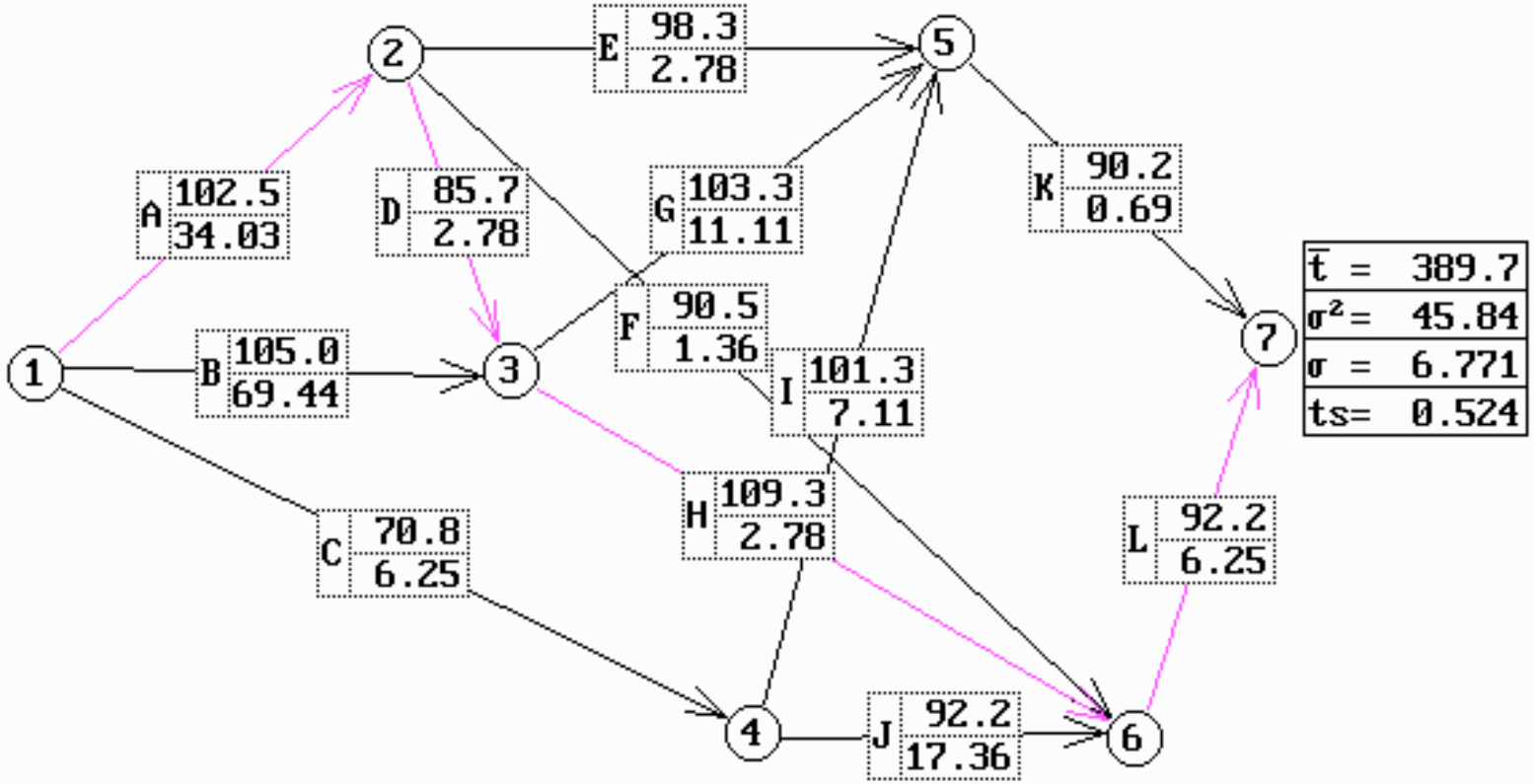
QUANTILES OF NORMAL DISTRIBUTION

	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.5	0.000	0.025	0.050	0.075	0.100	0.126	0.151	0.176	0.202	0.228
0.6	0.253	0.279	0.305	0.332	0.358	0.385	0.412	0.440	0.468	0.490
0.7	0.524	0.553	0.583	0.613	0.643	0.674	0.706	0.739	0.772	0.826
0.8	0.842	0.878	0.915	0.954	0.994	1.036	1.080	1.126	1.175	1.227
0.9	1.282	1.341	1.405	1.476	1.555	1.645	1.751	1.881	2.054	2.326

Probability = 0.70

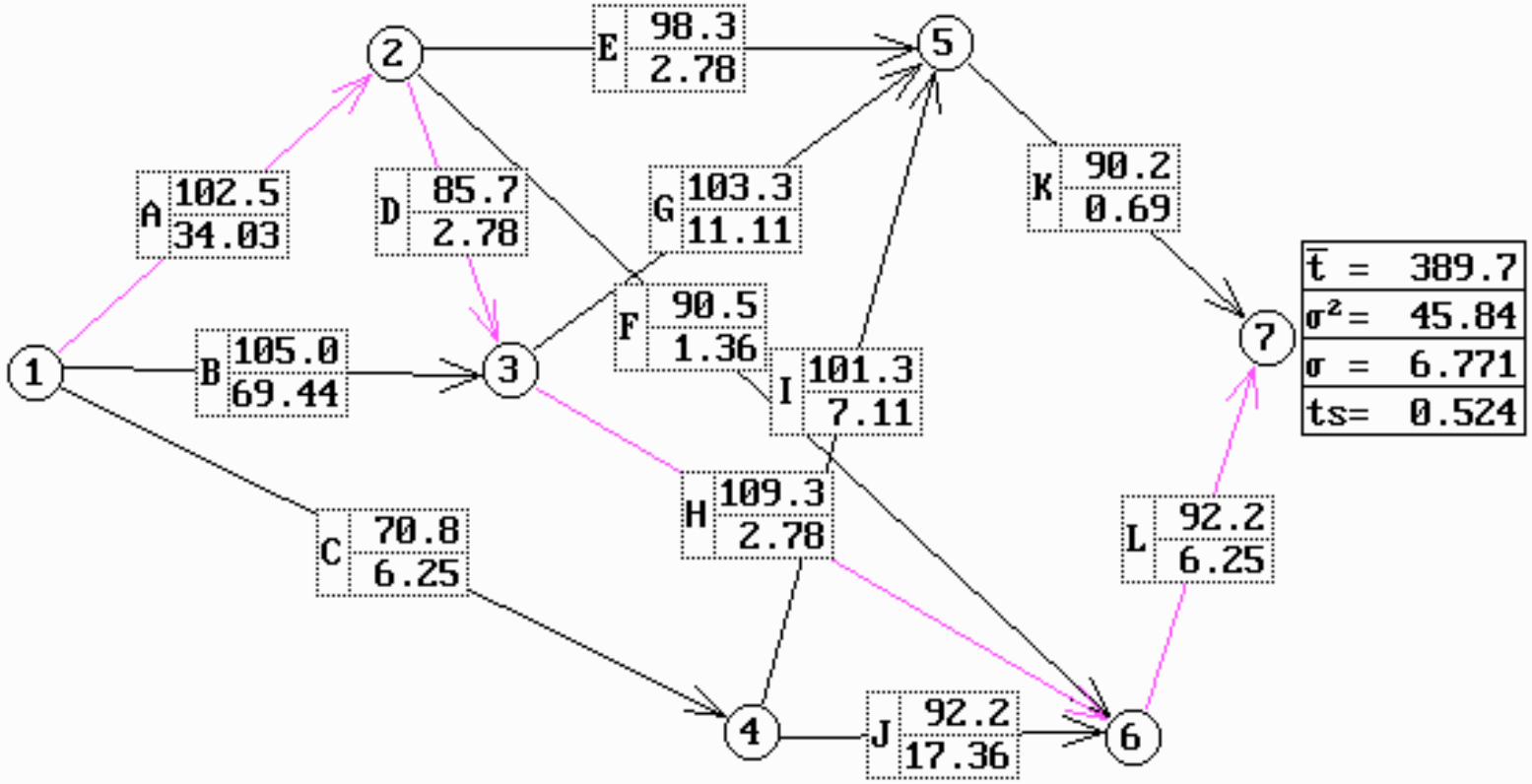
Select z value

Project completion time for given probability



Calculate project completion time 389.7 + 6.771 * 0.524 = 393.2

Project completion time for given probability



Probability	0.70
Project completion time	393.2