

P 13-19 Tom Schriber

- a.) Construct a network for this problem
See page 2
- b.) Determine the expected time and variance for each activity
Re. below.
- c.) Determine the critical path and project completion time
See page 2

$$Z = \frac{\text{Due date} - \text{Expected date of completion}}{\sigma_T}$$

d.)	Determine the probability that the project will be finished in 70 days or less 64.76%	Δd	Crit Path	70	68.67	NormDist	0.379	64.76%	Chance of completing on time
				3.51					
f.)	Determine the probability that the project will be finished in 80 days or less. 99.94%	Δd	Crit Path	80	68.67	NormDist	3.228	99.94%	Chance of completing on time
				3.51					
g.)	Determine the probability that the project will be finished in 90 days or less. 100.00%	Δd	Crit Path	90	68.67	NormDist	6.077	100.00%	Chance of completing on time
				3.51					

b.) Determine the expected time and variance for each activity

Activity	Predecessor or 1	Predecessor or 2	Predecessor or 3	Optimistic time	Most Likely time	Pessimistic time	Expected Time	Variance	Activity	Activity time	Early Start	Early Finish	Late Start	Late Finish	Slack	Standard Deviation
									Project	68.67						3.51
A				8	10	12	10.00	0.44	A	10.00	0.00	10.00	0.00	10.00	0.00	0.67
B				6	7	9	7.17	0.25	B	7.17	0.00	7.17	22.83	30.00	22.83	0.5
C				3	3	4	3.17	0.03	C	3.17	0.00	3.17	19.83	23.00	19.83	0.17
D	A			10	20	30	20.00	11.11	D	20.00	10.00	30.00	10.00	30.00	0.00	3.33
E	C			6	7	8	7.00	0.11	E	7.00	3.17	10.17	23.00	30.00	19.83	0.33
F	B	D	E	9	10	11	10.00	0.11	F	10.00	30.00	40.00	30.00	40.00	0.00	0.33
G	B	D	E	6	7	10	7.33	0.44	G	7.33	30.00	37.33	47.67	55.00	17.67	0.67
H	F			14	15	16	15.00	0.11	H	15.00	40.00	55.00	40.00	55.00	0.00	0.33
I	F			10	11	13	11.17	0.25	I	11.17	40.00	51.17	50.83	62.00	10.83	0.5
J	G	H		6	7	8	7.00	0.11	J	7.00	55.00	62.00	55.00	62.00	0.00	0.33
K	I	J		4	7	8	6.67	0.44	K	6.67	62.00	68.67	62.00	68.67	0.00	0.67
L	G	H		1	2	4	2.17	0.25	L	2.17	55.00	57.17	66.50	68.67	11.50	0.5

106.67

Project standard deviation = $\sigma_T = \sqrt{\text{Project variance}}$

12.32

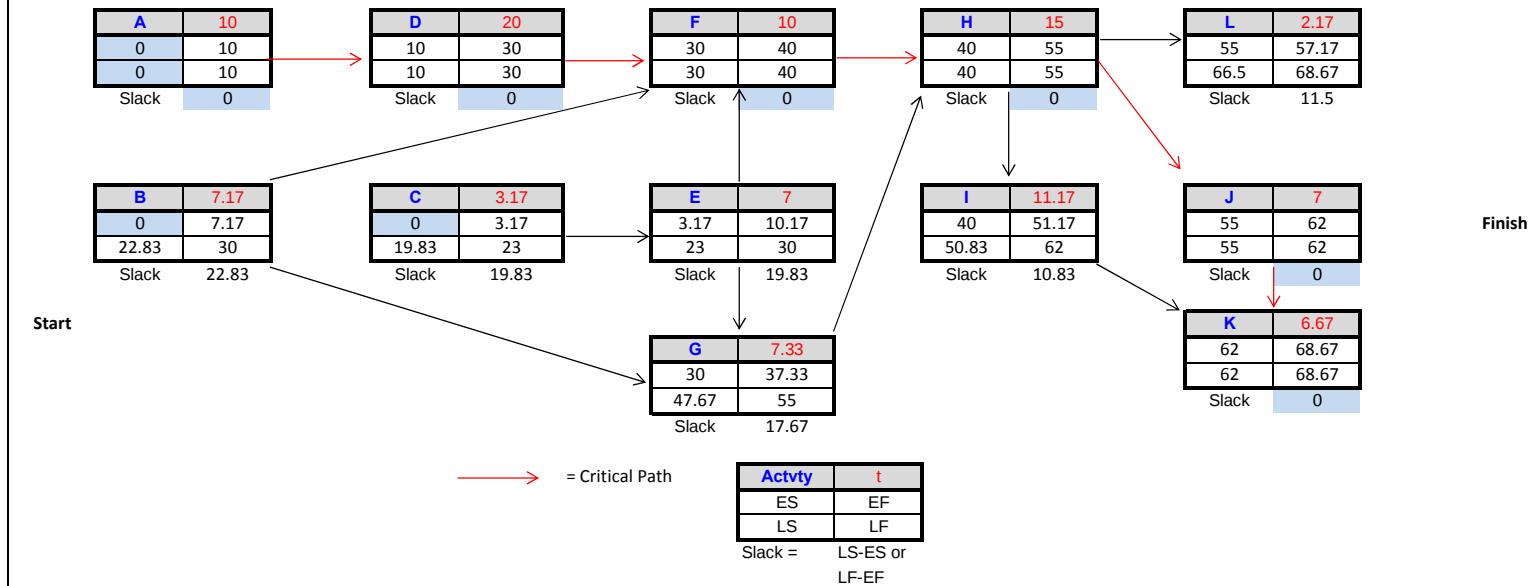
3.51

variances of activities on the critical path

$$t = \frac{a + 4m + b}{6}$$

$$\text{Variance} = \left(\frac{b - a}{6} \right)^2$$

a.) Construct a network for this problem:



c.) Determine the critical path and project completion time

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Gantt chart (Early times)

