Assignment 2

Project Networking (PERT)

1.

Activity	Network Nodes		Optimistic Time	Most Likely Time	Pessimistic Time
	Start	End			
A	1	2	1	3	2
B	1	4	4	6	5
C	1	3	4	6	5
D	2	6	2	4	3
E	2	4	1	3	2
F	3	4	2	4	3
G	3	5	7	15	8
H	4	6	4	6	5
I	4	7	6	14	10
J	4	5	1	3	2
K	5	7	2	4	3
L	6	7	6	14	10

1.1. Draw an arrow diagram representing the project.
1.2. What are the critical path and the associated time?
1.3. What is the total slack time in the network?
1.4. What is the expected time for 68, 95, and 99 percent of completion?
1.5. If the activity **G** had an estimated time 15 days, what impact will this have upon your answer to part 1.2?

2. Find the probability that the project will be completed in 28 days or less:

Activity	Predecessor	a	m	b
A	---	2	2	5
B	---	3	4	5
C	---	1	2	3
D	A	2	2	2
E	A	1	1	4
F	E , B	5	5	8
G	E , B	3	8	10
H	C , B , E	1	2	6
I	D , F	7	7	13
J	D , F	2	4	9
K	D , F , G	7	8	9
L	D , F , G	1	1	1
M	L , H	4	6	8
N	L , H	3	6	9
O	J , K , M	1	1	1
P	N	2	3	7

3. Draw the network of the following project using the AON:

Activity	Predecessor	Normal Time
A	---	2
B	---	4
C	A	3
D	B	1
E	C	6
F	B	9
G	F	7
H	E , D	3
I	G	2
J	H , I	9
K	B	2
L	K	5
M	L	6

1. Determine the critical path.
2. Calculate the project completion time, ES, EF, LS, LF, TS for each activity.

4. Draw the network (AON) and identify the critical path. Also calculate the ES, EF, LS, LF, and TS for each activity.

Activity	Predecessor	Normal Time
A	---	7
B	---	8
C	---	6
D	A	6
E	B	6
F	B	8
G	C	4
H	D, E	7
I	F, G, H	3