AON Network Times

6. From the following information, develop an AON project network. Complete the forward and backward pass, compute activity slack, and identify the critical path. How many days will the project take?

ID	Description	Predecessor	Time
A	Survey site	None	2
B	Excavate site	A	4
C	Install power lines	B	3
D	Install drainage	B	5
E	Pour foundation	C, D	3

7. The project information for the custom order project of the Air Control Company is presented here. Draw a project network for this project. Compute the early and late activity times and the slack times. Identify the critical path.

ID	Description	Predecessor	Time
A	Order review	None	2
B	Order standard parts	A	3
C	Produce standard parts	A	10
D	Design custom parts	A	13
E	Software development	A	18
F	Manufacture custom hardware	C, D	15
G	Assemble	B, F	10
H	Test	E, G	5

8. You have signed a contract to build a garage for the Simpsons. You will receive a $500 bonus for completing the project within 17 working days. The contract also contains a penalty clause in which you will lose $100 for each day the project takes longer than 17 working days.

   Draw a project network given the information below. Complete the forward and backward pass, compute the activity slack, and identify the critical path. Do you expect to receive a bonus or a penalty on this project?

ID	Description	Predecessor	Time
A	Prepare Site	None	2
B	Pour Foundation	A	3
C	Erect Frame	B	4
D	Roof	C	4
E	Windows	C	1
F	Doors	C	1
G	Electrical	C	3
H	Rough-In-Time	D, E, F, G	2
I	Door Opener	D, E, F, G	1
J	Paint	H, I	2
K	Cleaner	J	1

9. You are creating a customer database for the Hillsboro Hops minor league baseball team. Draw a project network given the information in the table that follows. Complete the forward and backward pass, compute activity slack, and identify the critical path.

   How long will this project take? How sensitive is the network schedule? Calculate the free slack and total slack for all noncritical activities.

ID	Description	Predecessor	Time (days)
A	Systems design	None	2
B	Subsystem A design	A	1
C	Subsystem B design	A	1
D	Subsystem C design	A	1
E	Program A	B	2
F	Program B	C	2
G	Program C	D	2
H	Subsystem A test	E	1
I	Subsystem B test	F	1
J	Subsystem C test	G	1
K	Integration	H, I, J	3
L	Integration test	K	1

10. K. Nelson, project manager of Print Software, Inc., wants you to prepare a project network; compute the early, late, and slack activity times; determine the planned project duration; and identify the critical path. His assistant has collected the following information for the Color Printer Drivers Software Project:

ID	Description	Predecessor	Time
A	External specifications	None	8
B	Review design features	A	2
C	Document new features	A	3
D	Write software	A	60
E	Program and test	B	40
F	Edit and publish notes	C	2
G	Review manual	D	2
H	Alpha site	E, F	20
I	Print manual	G	10
J	Beta site	H, I	10
K	Manufacture	J	12
L	Release and ship	K	3

11. *A large Southeast city is requesting federal funding for a park-and-ride project. One of the requirements in the request application is a network plan for the design phase of the project. Sophie Kim, the chief engineer, wants you to develop a project network plan to meet this requirement. She has gathered the activity time estimates and their dependencies shown here. Show your project network with the activity early, late, and slack times. Mark the critical path.

ID	Description	Predecessor	Time
A	Survey	None	5
B	Soils report	A	20
C	Traffic design	A	30
D	Lot layout	A	5
E	Approve design	B, C, D	80
F	Illumination	E	15
G	Drainage	E	30
H	Landscape	E	25
I	Signage	E	15
J	Bid proposal	F, G, H, I	10

* The solution to this exercise can be found in Appendix One.