

ACTIVITY	EST	LST	t	TOTAL COST
A	0	0	6	\$10,000
B	1	4	2	\$14,000
C	3	3	7	\$ 5,000
D	4	9	3	\$ 6,000
E	6	6	10	\$14,000
F	14	15	11	\$13,000
G	12	18	2	\$ 4,000
H	14	14	11	\$ 6,000
I	18	21	6	\$18,000
J	18	19	4	\$12,000
K	22	22	14	\$10,000
L	22	23	8	\$16,000
M	18	24	6	\$18,000

- 26 Fred Ridgeway's project (see Problem 25) has progressed over the past several months, and it is now the end of month 16. Fred would like to know the current status of the project with regard to schedule and budget by developing an appropriate table. The relevant data are shown in the following table.

ACTIVITY	PERCENTAGE COMPLETED	ACTUAL COST
A	100	\$13,000
B	100	\$12,000
C	100	\$6,000
D	100	\$6,000
E	60	\$9,000
F	10	\$800
G	80	\$3,600
H	15	\$375

Assume that activities not shown in the table have not yet started and have incurred no cost to date. All activities follow their earliest time schedules.

- 27 Susan Roger needs to coordinate the opening of a new office for her company in the city of Denver. The activity time and relationships for this project, as well as the total budgeted cost for each activity, are shown in the following table.

ACTIVITY	IMMEDIATE PREDECESSORS	TIME (WEEKS)	TOTAL COST
A	—	2	\$2,200
B	A	3	\$5,100
C	A	4	\$6,000
D	B, C	2	\$3,600
E	C	3	\$2,700
F	D, E	3	\$1,800

- (a) Develop a weekly budget for this project, using the earliest start times.

- (b) Develop a weekly budget for this project, using the latest start times.

- 28 Susan Roger's project (see Problem 27) has progressed over the past several weeks, and it is now the end of week 8. Susan would like to know the current status of the project with regard to schedule and budget by developing an appropriate table. Assume that all activities follow their earliest time schedules. The relevant data are shown in the following table.

ACTIVITY	PERCENTAGE COMPLETED	ACTUAL COST
A	100	\$1,900
B	100	\$5,300
C	100	\$6,150
D	40	\$1,800
E	60	\$1,755
F	0	\$ 0

- 29 General Foundry's project crashing data are shown in Table 10. Crash this project by hand to 10 weeks. What are the final times for each activity after crashing, and what is the total cost associated with reducing the duration of this project from 15 to 10 weeks?
- 30 Bowman Builders manufactures steel storage sheds for commercial use. Joe Bowman, president of Bowman Builders, is contemplating producing sheds for home use. The activities necessary to build an experimental model and related data are given in the table on the next page. The project completion time using standard times is 14 weeks.

Set up and solve an LP model using Excel to crash this project to 10 weeks. How much does it cost to reduce the duration of this project from 14 to 10 weeks?

- 31 The table on the next page describes the various activities of a construction project in a chemical plant.
- (a) Set up and solve an LP model using Excel to crash this project to 22 days. What is the total crashing cost?
- (b) Assuming each activity can only be crashed in whole days, what is the earliest completion of this project? What is the total associated crash cost?

- 32 A new order filling system needs to be installed as soon as possible. The table on the next page lists the project's activities and their predecessors. Also provided is the cost information to reduce the standard activity times.

Set up and solve an LP model using Excel to crash this project to 24 days. What is the total crashing cost?