

**Computer Exercises**

15. The planning department of an electronics firm has set up the activities for developing and production of a new MP3 Player. Given the information below, develop a project network using Microsoft Project. Assume a five-day workweek and the project starts on January 4, 2013.

Activity ID	Description	Activity Predecessor	Activity Time (weeks)
1	Staff	None	2
2	Develop market program	1	3
3	Select channels of distribution	1	8
4	Patent	1	12
5	Pilot production	1	4
6	Test market	5	4
7	Ad promotion	2	4
8	Set up for production	4, 6	16

The project team has requested that you create a network for the project, and determine if the project can be completed in 45 weeks.

16. Using Microsoft Project, set up the network and determine the critical path for Phase 1 of the project. The project workweek will be 5 days (M—F).

**Whistler Ski Resort Project**

Given the fact that the number of skiing visitors to Whistler, B.C., Canada has been increasing at an exciting rate, thanks to the 2010 Winter Olympics, the Whistler Ski Association has been considering construction of another ski lodge and ski complex. The results of an economic feasibility study just completed by members of the staff show that a winter resort complex near the base of Whistler Mountain could be a very profitable venture. The area is accessible by car, bus, train, and air. The board of directors has voted to build the ten-million dollar complex recommended in the study. Unfortunately, due to the short summer season, the complex will have to be built in stages. The first stage (year 1) will contain a day lodge, chair lift, rope tow, generator house (for electricity), and a parking lot designed to accommodate 400 cars and 30 buses. The second and third stages will include a hotel, ice rink, pool, shops, two additional chair lifts, and other attractions. The board has decided that stage one should begin no later than April 1 and be completed by October 1, in time for the next skiing season. You have been assigned the task of project manager, and it is your job to coordinate the ordering of materials and construction activities to ensure the project's completion by the required date.

After looking into the possible sources of materials, you are confronted with the following time estimates. Materials for the chair lift and rope tow will take 30 days and 12 days, respectively, to

arrive once the order is submitted. Lumber for the day lodge, generator hut, and foundations will take 9 days to arrive. The electrical and plumbing materials for the day lodge will take 12 days to arrive. The generator will take 12 days to arrive. Before actual construction can begin on the various facilities, a road to the site must be built; this will take 6 days. As soon as the road is in, clearing can begin concurrently on the sites of the day lodge, generator house, chair lift, and rope tow. It is estimated that the clearing task at each site will take 6 days, 3 days, 36 days, and 6 days, respectively. The clearing of the main ski slopes can begin after the area for the chair lift has been cleared; this will take 84 days.

The foundation for the day lodge will take 12 days to complete. Construction of the main framework will take an additional 18 days. After the framework is completed, electrical wiring and plumbing can be installed concurrently. These should take 24 and 30 days, respectively. Finally, the finishing construction on the day lodge can begin; this will take 36 days.

Installation of the chair lift towers (67 days) can begin once the site is cleared, lumber delivered, and the foundation completed (6 days). Also, when the chair lift site has been cleared, construction of a permanent road to the upper towers can be started; this will take 24 days. While the towers are being installed, the electric motor to drive the chair lift can be installed; the motor can be installed in 24 days. Once the towers are completed and the motor installed, it will take 3 days to install the cable and an additional 12 days to install the chairs.

Installation of the towers for the rope tow can begin once the site is cleared and the foundation is built and poured; it takes 4 days to build the foundation, pour the concrete and let it cure, and 20 days to install the towers for the rope tow. While the towers are being erected, installation of the electric motor to drive the rope tow can begin; this activity will take 24 days. After the towers and motor are installed, the rope tow can be strung in 1 day. The parking lot can be cleared once the rope tow is finished; this task will take 18 days.

The foundation for the generator house can begin at the same time as the foundation for the lodge; this will take 6 days. The main framework for the generator house can begin once the foundation is completed; framing will take 12 days. After the house is framed, the diesel generator can be installed in 18 days. Finishing construction on the generator house can now begin and will take 12 more days.

**Assignment:**

1. Identify the critical path on your network.
2. Can the project be completed by October 1?

**Optical Disk Preinstallation Project**

17. The optical disk project team has started gathering the information necessary to develop the project network—predecessor activities and activity times in weeks. The results of their meeting are found in the following table.