# QSO 520 Module Eight Homework Questions

1. (P10-46) A plant engineering group needs to set up an assembly line to produce a new product. The following table describes the relationships between the activities that need to be completed for this product to be manufactured:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Activity | Days | | | Immediate  Predecessors |
| a | m | b |
| A | 3 | 6 | 8 |  |
| B | 5 | 8 | 10 | A |
| C | 5 | 6 | 8 | A |
| D | 1 | 2 | 4 | B, C |
| E | 7 | 11 | 17 | D |
| F | 7 | 9 | 12 | D |
| G | 6 | 8 | 9 | D |
| H | 3 | 4 | 7 | F, G |
| I | 3 | 5 | 7 | E, F, H |

Assume that each activity time is normally distributed with expected time and standard deviation computed as shown in equations 7-6 and 7-8, respectively, on page 283. Round off all activity times to two decimal places.

1. Use a Monte Carlo simulation to determine the probability that the project will finish in 37 days or less.
2. Use a Monte Carlo simulation to determine the probability that the project will take more than 32 days.