Chapter 10: CPM Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Review for test 1 Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Create a Digraph for the following.

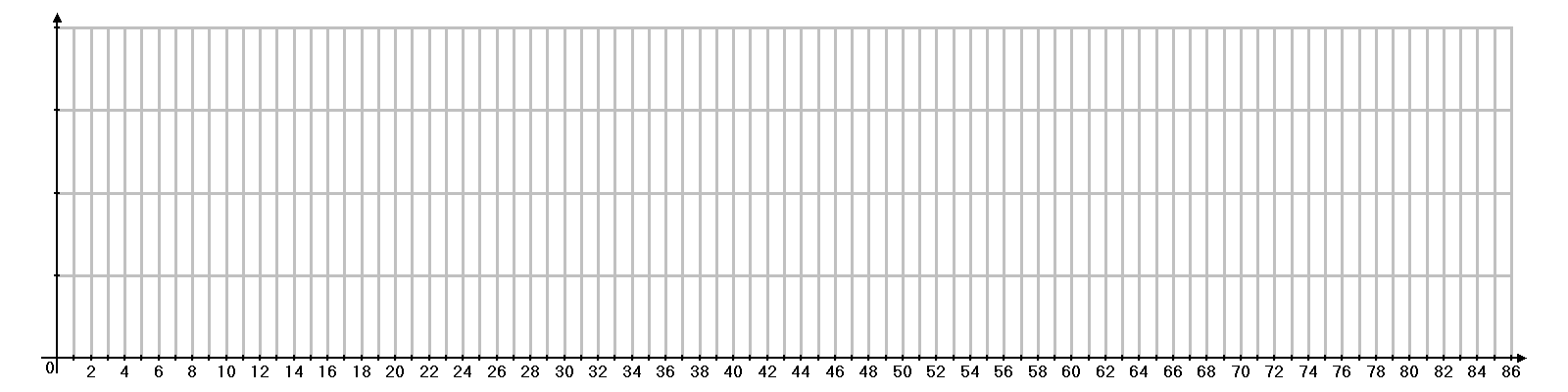
|  |  |  |  |
| --- | --- | --- | --- |
| **Activity**  **Code** | **Activity Description** | **Activity**  **Dependence** | **Completion**  **Time (min)** |
| *A* | Jane rises, wakes Joe, starts coffee |  | 5 |
| *B* | Coffee brews | *A* | 10 |
| *C* | Joe gets up, dresses, and cooks breakfast | *A* | 35 |
| *D* | Jane showers | *A* | 12 |
| *E* | Jane drinks first cup of coffee | *B*, *D* | 5 |
| *F* | Jane puts on makeup and dresses | *E* | 15 |
| *G* | Jane eats breakfast and more coffee | *C*, *F* | 15 |
| *H* | Jane drives to work | *G* | 30 |

1. Jane’s Morning Routine Calculations

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | |
| **Activity** | **EST** | **LST** | **EFT** | **LFT** | **Slack (minutes)** | **Critical Activity** | |
| *A* |  |  |  |  |  |  | |
| *B* |  |  |  |  |  |  | |
| *C* |  |  |  |  |  |  | |
| *D* |  |  |  |  |  |  | |
| *E* |  |  |  |  |  |  | |
| *F* |  |  |  |  |  |  | |
| *G* |  |  |  |  |  |  | |
| *H* |  |  |  |  |  |  | |
|  |  | Critical Path: ­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |  |
| Project Completion Time is \_\_\_\_\_\_\_\_\_\_\_ minutes. | | | | | | | |

**Jane’s Morning Routine Extension Questions**

1. Determine the second most critical path of Jane’s morning routine and the slack associated with it.
2. What if Jane hits the snooze bar a couple of times and Activity *A*’s completion time changes to 15 minutes? How does this change affect the digraph and the critical path?
3. What if Jane realizes that her shirt needs to be ironed which tacks on an additional 6 minutes to Activity *F*? How does this change affect the digraph and the critical path?
4. Create a Gantt Chart for Jane’s Morning Routine



Consider the following project networks. Assume that the time required (in weeks) for each activity is a predictable constant. Find the EST, EFT, LST, LFT, then identify the critical path and draw the Gantt Chart.

*A*

*3*

*B*

*6*

*C*

*4*

*D*

*1*

*E*

*4*

*F*

*2*

*G*

*5*

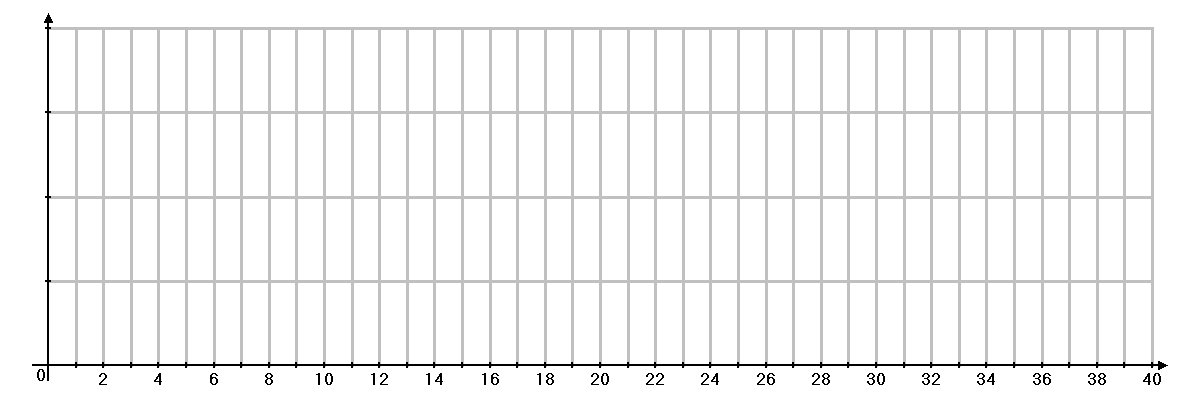
*H*

*7*

*I*

*2*





*A*

*4*

*B*

*1*

*C*

*4*

*D*

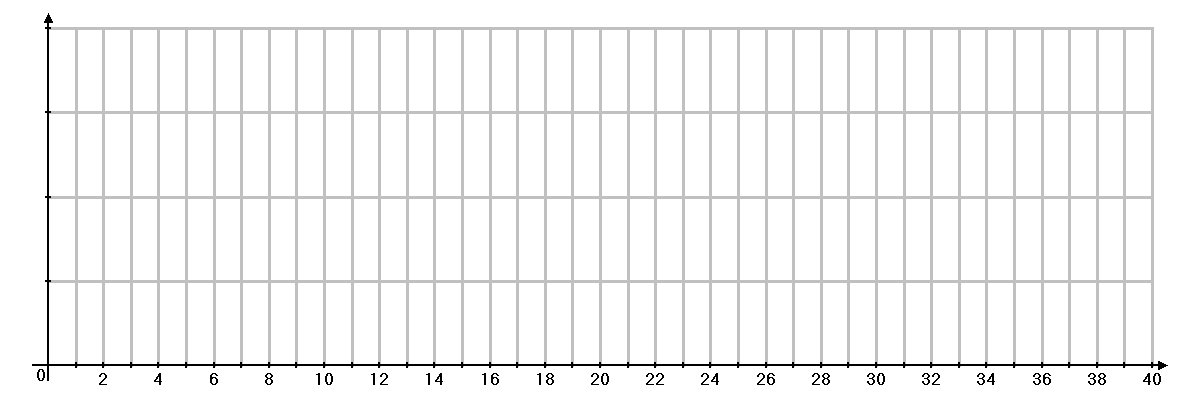
*6*

*E*

*5*

*F*

*8*





*A*

*2*

*B*

*5*

*C*

*3*

*D*

*2*

*E*

*4*

*F*

*4*

*H*

*5*

*G*

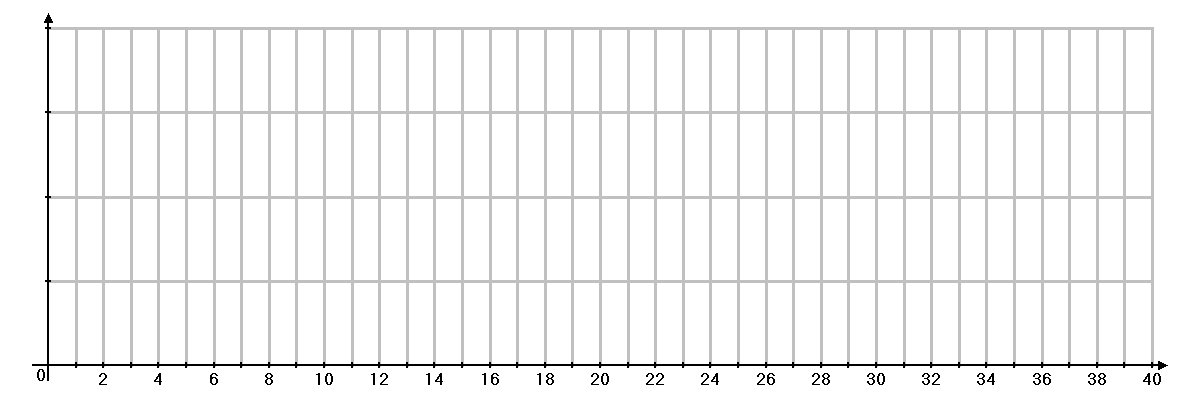
*2*

*J*

*1*

*I*

*6*





*K*

*6*

*J*

*4*

*I*

*1*

*F*

*3*

*G*

*3*

*H*

*5*

*E*

*3*

*D*

*2*

*C*

*5*

*B*

*3*

*A*

*7*

