1. Construct the following matrix and determine the maximum weighted sum using the bipartite function. Use Matlab.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | 3 | 7 | 9 | 7 |
| 2 | 8 | 5 | 4 | 0 |
| 0 | 1 | 6 | 3 | 5 |
| 6 | 5 | 1 | 4 | 3 |

1. We have a group of *6* single women and *6* single men who are attending the WFU graduate student speed dating event. Each student indicates who among the opposite sex would be acceptable potential partner. This situation can be represented as a bipartite graph. Here, the vertices are the students, and a woman is joined by an edge to a man if they mutually like each other. For example: We could have the women Amber, Brittany, Chrissy, Donna, Eliza, and Fran, and the men Able, Brad, Cane, David, Enoch, and Finn. If Amber liked Able and Brad, (and vice-versa), Brittany liked Cane and Able, Chrissy liked David, Enoch and Finn, Donna liked Brad, Eliza liked Able and David, and Fran liked Finn, what would the bipartite graph look like? In this situation could we match everybody to someone they liked, assuming only one match per person?  
     
   Answer: There is a perfect matching: We could match Amber to Able, Brittany to Cane, Chrissy to Enoch, Donna to Brad, Eliza to David, and Fran to Finn.

