# Assigning Engineers

A small engineering firm has 4 senior designers available to work on the firm's 4 current projects over the next 2 weeks. The firm's manager has developed the following table of quality scores, which show each designer's design quality on each type of project, on a scale of 100. Also shown is an estimate of the time (in hours) required for each project.

| Designer | Project | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 1 | 90 | 80 | 25 | 50 |
| 2 | 60 | 70 | 50 | 65 |
| 3 | 70 | 40 | 80 | 85 |
| 4 | 65 | 55 | 60 | 75 |
| Time | 70 | 50 | 85 | 35 |

a. Assume that one designer is assigned to each project. What assignment of designers to projects maximizes the sum of the quality scores assigned?

b. Suppose that each designer has 80 hours available over the next two weeks. Assuming that more than one designer can work on a project, what assignment schedule maximizes the sum of quality scores assigned?