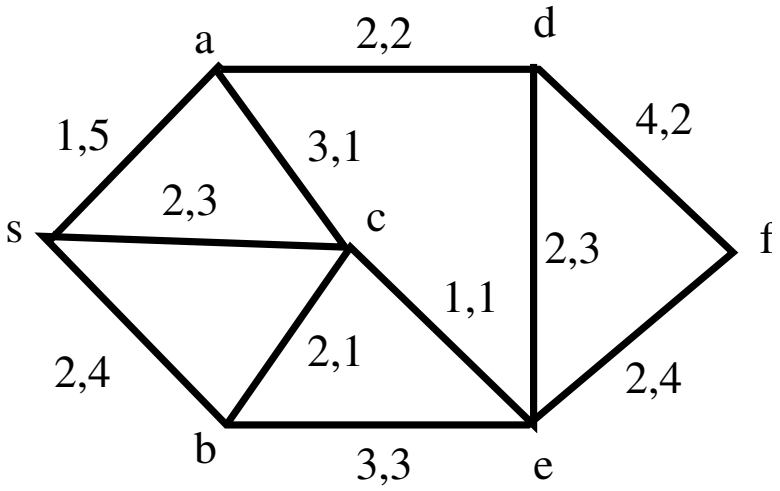
Department of Mathematical Sciences
CARNEGIE MELLON UNIVERSITY

OPERATIONS RESEARCH II 21-393

Homework 3: Due Wednesday October 16.

1. Find a shortest path from s to all other nodes in the digraph below. Each edge (x, y) is labelled by a pair (a, b) and the length of the corresponding arc is $a + bt$ where t is the time the path reaches x. All arcs are directed lexicograhically e.g. (c, e) is directed from c to e.



2. Find a minimum cost assignment with the costs given in the matrix below:

$$\begin{bmatrix} 2 & 4 & 1 & 4 & 2 \\ 1 & 3 & 2 & 2 & 4 \\ 3 & 2 & 5 & 2 & 3 \\ 1 & 3 & 2 & 5 & 2 \\ 2 & 1 & 3 & 3 & 2 \end{bmatrix}$$

3. Find a minimum weight spanning tree in the weighted grapoh below: