## Problem Set 7: The Network Simplex Algorithm

Draw the network and solve the network transhipment problem

$$
\min c^{T} x \quad \text { subject to } \quad A x=b, 0 \leq x
$$

with

$$
A=\left[\begin{array}{rrrrrrrrrrrrr}
-1 & -1 & & 1 & & & & & & & & \\
1 & & -1 & & & & & & 1 & & & & \\
& & 1 & -1 & -1 & & & & & & & \\
& 1 & & & & -1 & -1 & & & & & \\
& & & & & 1 & & -1 & -1 & & & \\
& & & & 1 & & & & & -1 & 1 & \\
& & & & & & 1 & & & 1 & & -1 \\
& & & & & & & & 1 & & -1 & 1
\end{array}\right]
$$

using the network simplex algorithm and the following 3 choices for $b$ and $c$.
(1) $b=[-2,-1,2,-6,1,0,3,3]^{T}, c=[3,1,0,0,1,2,4,2,3,1,1,0]^{T}$
(2) $b=[-2,-1,2,-6,1,0,3,3]^{T}, c=[2,1,-3,1,1,-2,4,2,3,1,2,4]^{T}$
(3) $b=[-3,1,3,-1,2,0,-3,1]^{T}, c=[3,1,0,0,1,2,4,2,3,1,1,0]^{T}$

