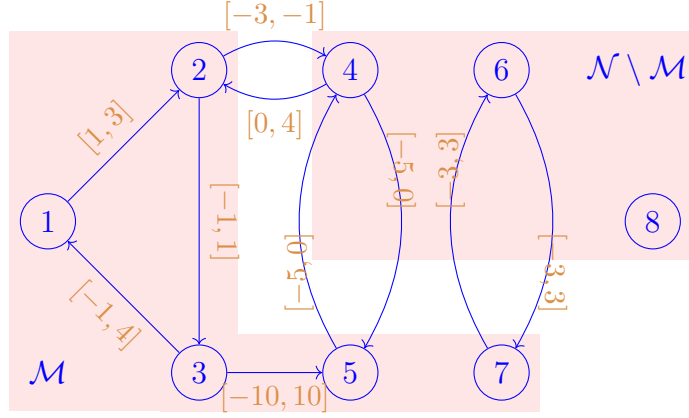```
\begin{center}
  \begin{tikzpicture}[blue, scale=1.5]
    \node[draw,circle] (V1) at (0,1) {1};
    \node[draw,circle] (V2) at (1,2) {2};
    \node[draw,circle] (V3) at (1,0) {3};
    \node[draw,circle] (V4) at (2,2) {4};
    \node[draw,circle] (V5) at (2,0) {5};
    \node[draw,circle] (V6) at (3,2) {6};
    \node[draw,circle] (V7) at (3,0) {7};
    \node[draw,circle] (V8) at (4,1) {8};
    \draw[->] (V1) -- (V2) ;
    \draw[->] (V3) -- (V1);
    \draw[->] (V2) -- (V3) node[midway, sloped, above] {$[\ell_{ij},u_{ij}]$};
    \draw[->] (V3) -- (V5);
    \draw[->] (V2) to[bend left] (V4) ;
    \draw[->] (V4) to[bend left] (V2) ;
    \draw[->] (V5) to[bend left] (V4) ;
    \draw[->] (V4) to[bend left] (V5) ;
    \draw[->] (V7) to[bend left] (V6) ;
    \draw[->] (V6) to[bend left] (V7) ;
  \end{tikzpicture}
\end{center}
```

Figure 1: Anotated network

# List of Figures

```
\definecolor{cof}{RGB}{219,144,71}
\pgfdeclarelayer{bg}
\pgfsetlayers{bg, main}
\begin{tikzpicture}[blue,scale=2]
  \node[draw,circle] (V1) at (0,1) {1};
  \node[draw,circle] (V2) at (1,2) {2};
  \node[draw,circle] (V3) at (1,0) {3};
  \node[draw,circle] (V4) at (2,2) {4};
  \node[draw,circle] (V5) at (2,0) {5};
  \node[draw,circle] (V6) at (3,2) {6};
  \node[draw,circle] (V7) at (3,0) {7};
  \node[draw,circle] (V8) at (4,1) {8};

  \draw[->] (V1) -- (V2) node[midway,above,cof,sloped] {\small$[1,3]$};
  \draw[->] (V3) -- (V1)node[midway,below,cof,sloped] {\small$[-1,4]$};
  \draw[->] (V2) -- (V3)node[midway,above,cof,sloped] {\small$[-1,1]$} ;
  \draw[->] (V3) -- (V5)node[midway,below,cof,sloped] {\small$[-10,10]$};
  \draw[->] (V2) to[bend left] node[midway,above,cof,sloped] {\small$[-3,-1]$}(V4) ;
  \draw[->] (V4) to[bend left] node[midway,below,cof,sloped] {\small$[0,4]$}(V2) ;
  \draw[->] (V5) to[bend left] node[midway,left,cof,sloped] {\small$[-5,0]$}(V4) ;
  \draw[->] (V4) to[bend left] node[midway,left,cof,sloped] {\small$[-5,0]$}(V5) ;
  \draw[->] (V7) to[bend left] node[midway,right,cof,sloped] {\small$[-3,3]$}(V6) ;
  \draw[->] (V6) to[bend left] node[midway,right,cof,sloped] {\small$[-3,3]$}(V7) ;

  \begin{pgfonlayer}{bg}
    \node[fill=red!10,fit=(V4) (V6) (V8)] {};
    \node[fill=red!10,fit=(V1) (V2) (V3)] {};
    \node[fill=red!10,fit=(V3) (V5) (V7)] {};
    \draw (3.9,2) node {$\mathcal{N}\setminus\mathcal{M}$};
    \draw (0,0) node {$\mathcal{M}$};
  \end{pgfonlayer}

\end{tikzpicture}
```

Figure 2: Network with set of nodes