Here is a simple example of using TikZ to draw a graph, in this case $K_{4}$.


The TikZ code that produced it is as follows:

```
\begin{tikzpicture}
%% vertices
\draw[fill=black] (0,0) circle (3pt);
\draw[fill=black] (4,0) circle (3pt);
\draw[fill=black] (2,1) circle (3pt);
\draw[fill=black] (2,3) circle (3pt);
%% vertex labels
\node at (-0.5,0) {1};
\node at (4.5,0) {2};
\node at (2.5,1.2) {3};
\node at (2,3.3) {4};
%%% edges
\draw[thick] (0,0) -- (4,0) -- (2,1) -- (0,0) -- (2,3) -- (4,0) -- (2,1) -- (2,3);
\end{tikzpicture}
```

This should be pretty self-explanatory. The ordered pairs in parentheses are all simply coordinates in $\mathbb{R}^{2}$. The edges are drawn by taking a walk through the graph, using each edge exactly once.

You can do much fancier things in TikZ, but this should at least get you started.

