Planar graphs are those which have embeddings in the plane without edges crossing. Extending to infinite graphs, we can ask how difficult it is to produce a planar embedding for a given planar graph. To make sense of this question, we consider computable graphs and ask whether there is a computable function which describes the planar embedding. We give three potential definitions for a computable graph to be computably planar and show that in each case there are computable graphs which are planar but not computably planar. (Received September 21, 2015)