Geometric constructions using ruler and compass are being solved for thousands of years. Humans are capable of solving these problems without explicit knowledge of the analytical models of geometric primitives present in the scene. On the other hand, most methods for solving these problems on a computer require an analytical model. In this thesis, we introduce a method for solving geometrical constructions with access only to the image of the given geometric construction. The method utilizes Mask R-CNN, a convolutional neural network for detection and segmentation of objects in images and videos. Outputs of the Mask R-CNN are masks and bounding boxes with class labels of detected objects in the input image. In this work, we employ and adapt the Mask R-CNN architecture to solve geometric construction problems from image input. We create a process for computing geometric construction steps from masks obtained from Mask R-CNN and describe how to train the Mask R-CNN model to solve geometric construction problems. However, solving geometric problems this way is challenging, as we have to deal with object detection and construction ambiguity. There is possibly an infinite number of ways to solve a geometric construction problem. Furthermore, the method should be able to solve problems not seen during the training. To solve unseen construction problems, we develop a tree search procedure that searches the space of hypotheses provided by the Mask R-CNN model. We describe multiple components of this model and experimentally demonstrate their benefits. As experiments show, our method can learn constructions of multiple problems with high accuracy. When the geometric problem is seen at training time, the proposed approach learns to solve all 68 geometric construction problems from the first six level packs of the geometric game Euclidea with an average accuracy of 92%. The proposed approach can also solve new geometric problems unseen at training. In this significantly harder set-up, it successfully solves 31 out of these 68 geometric problems. The implementation of our method is available at `https://github.com/mackej/Learning-to-solve-geometric-construction-problems-from-images`