**The Good Will Hunting Problem**

[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&docid=yorJQ8hfAErK3M&tbnid=0_T3vQBIHsA7wM:&ved=0CAUQjRw&url=http%3A%2F%2Fwww.ropeofsilicon.com%2Fhow-is-your-graph-theory-and-grasp-of-homeomorphically-irreducible-trees%2F&ei=1tT8U5qEMoK0yATJoIGYBA&bvm=bv.73612305,d.aWw&psig=AFQjCNEhVAMjO-nJgIayL13CG_Xbu2EN-Q&ust=1409164860818673)

Part way through the movie Good Will Hunting, a janitor (played by Matt Damon) solves a challenging mathematics problem anonymously that is said to have taken Harvard professors two years to solve. Just how difficult was this problem? See if you can solve it yourself… in less than two years ☺

**The Problem:**

**Find every homeomorphically irreducible tree of degree 10. *Hint: There are 10 trees.***

Translation to English: Draw as many pictures/trees as possible with the following features.

* Each picture (tree) contains 10 dots (degree 10) with lines connecting them. Here are two examples:
* Closed loops are not allowed…

Closed loop not allowed

* Translating/reflecting the tree and bending the branches does not count as a new tree. Same tree

* No dot can have exactly two lines connecting to it (reducible).

Reducible; not allowed