

Ackermann Functions and Non Primitive Recursive Functions

The goal of the presentation is to discuss specific functions which are computable and not primitive recursive. The standard one is the Ackermann function. The following article is a good starting point.

- http://en.wikipedia.org/wiki/Ackermann_Function

Your presentation should include

- A discussion of what the Ackermann function is.
- A discussion of how the Ackermann grows incredibly fast (with specific examples of values).
- Mention that the function is not primitive recursive because it grows faster than any primitive recursive function (and what that means).
- A description of the “Inverse Ackermann Function”.

In addition your presentation should include at least two of

- A discussion of another recursive function which isn't primitive recursive.
- A discussion of the history of the Ackermann function.
- A discussion of Knuth's up arrow notation or Conway's chained arrow notation and why they are useful when discussing the Ackermann function.

You should also feel free to expand on the above in any directions you would like (so long as they are related to the topic). If you have any questions regarding the presentation feel free to e-mail your TA or Dr. Ackerman