Matthew Wiebe

10/04/15

Machine Learning

HW1

**PROBLEM #1**



The resulting size of the version space is 96π

.

.

With this

The resulting size of the version space is 221.

1. (0,-5) would shrink both version spaces since if it is positive, SB must grow in order encompass it, and if it is negative, GB must shrink to avoid encompassing it. The point (-7,7) would be labeled as a negative in H1 but this would be positive in H2 so it would shrink the version space.
2. I would think that H2 would be more generalizable. This is because we are on a Cartesian grid and it is easier to describe more complicated regions in rectangles. With restrictive negative cases, with circles we have to limit the radius of the circle, whereas with rectangle we can get around this by describing the version space with a multitude various sized rectangles.

**PROBLEM #2**