- 1. What is the area of the circle by Monte Carlo estimate, using the numbers given below? There are 1,089 patches. Give the estimate in square patches, as those are the units in turtle world.
- 2. Recall the area of a circle = PI * radius squared.

 $AREA = 3.14159 * radius^{2}$

3. What is the radius of the circle, by using the Monte Carlo estimate you got for the area. Please show all your work.



4. What if you were told the radius of a circle and had the count of the cows inside the circle and the count of the houses outside of the circle, but had no idea how big the entire turtle world was in patches. Could you estimate the size of the turtle world using Monte Carlo? (Note: The SeePatches switch would be set to OFF and the size of the turtle grid would be different from 1089, which is a 33 wide by 33 tall grid, by the way).