Take Home Test CSE 356, F05
Due 9/15/05, 9am

Responses should be emailed, attached as .pdf files.

1. (5 pts) Consider the 2D taxi-cab $d_T$ and Euclidean metrics $d_E$. Consider also the following code fragment on two points $p_1$ and $p_2$:

   
   if ($\text{dist}(p_1, p_2) < 1$) then, true, 
   else, false. 

   Suppose that $p_1$ is the origin. 

   Describe, with a specific example for values of $p_2$ the difficulties that would be caused in executing consistency of two implementations of this code, if one implementation used $d_T$ for $\text{dist}$, but another used $d_E$.

2. (5 pts) In the Bresenham line drawing algorithm, what is the critical property of the line that is used when incrementing along the x-axis to determine the new value for $y$? How is this generalized into an algorithm for circles? Namely, what is the generalization of the critical line property that is used for circles?

3. Create new design plan, as described in outline on home page (10 pts)