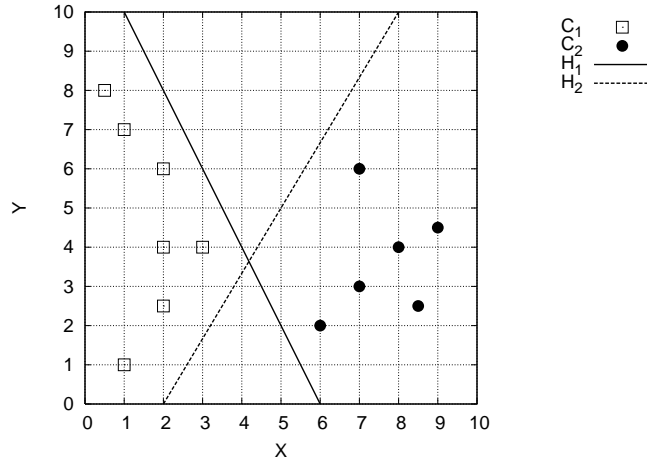


**CSCI4390/6390 – Data Mining**  
**Fall 2007, Quiz 14**  
**Total Points: 30**

Name: \_\_\_\_\_

Consider the 2-dimensional dataset shown below, with the labeled points belonging to two classes  $C_1$  and  $C_2$ .



1. (10 points) Find the equations for the two hyperplanes  $H_1$  and  $H_2$ .
2. (10 points) List all the support vectors for  $H_1$  and for  $H_2$ .
3. (10 points) Which of the two hyperplanes is better at separating the two classes? Your answer must be based on margin calculation (and not just eye-balling).