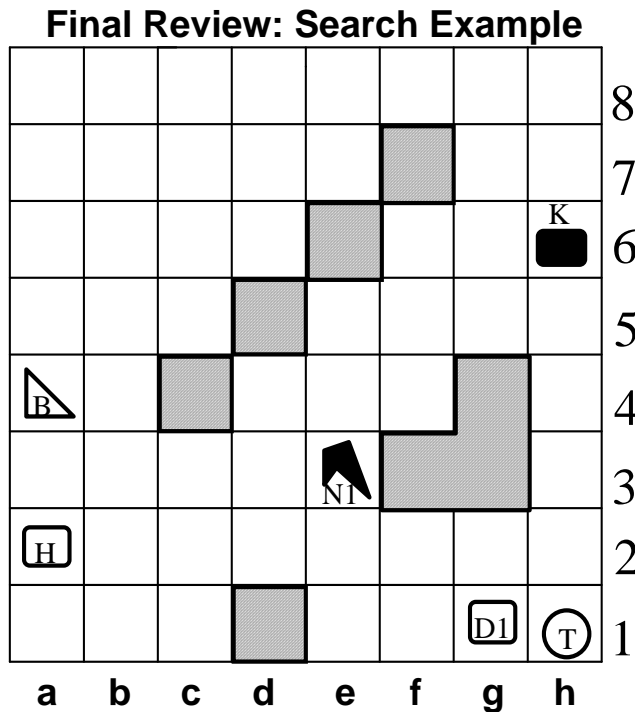


**Final Exam: April 30 at 8:00 am
Room NC 1313**



Consider the following combat operation. Black has robot K (value 200); K can move like a King. Black has one more robot N1 (value 50), which can move like a Knight but can make only one move and then stay forever. White has robot B (value 5), which can move like a Bishop, robot H (value 200), which moves like a King, and robot D1 (value 3), which can make just one move diagonally and stay. White has also the immobile target T (200). If the target T is destroyed the operation is complete. Black and White moves alternate and only one robot at a time can move. At the initial state White side is going to move. Both sides want to destroy adversaries with the greatest total value and protect friendly robots.

What is the optimal strategy for both sides? A horizon is unknown. Generate searches. Draw search trees. Do minimax. Explain your cutoffs and terminations of branches. Find the branch(es) with optimal value.

Draw zones that you generate. If you make a move along the trajectory in a zone explain why this trajectory is active (not frozen) in this zone (compare length and time).