1. Given that the agent does not know which cells are initially blocked, it makes sense for the agent to move east instead of north because the estimated distance to the target will decrease moving east than moving north. Moving east, the heuristic will be 3 from the starting position but being forced to move north, the heuristic will be 5 from the starting position. Because the actual cost of moving the agent to the target is 3, assuming no cells are blocked, the heuristic for moving north first will not be admissible. In addition, the heuristic for moving north first will not be consistent either because the cost of moving up north plus the heuristic to the target from the block one cell north will be 5, whereas the heuristic from the current position of the agent is 3. Because A* search requires the heuristic to be admissible and consistent, heuristic when moving east is admissible and consistent, the first move of the agent will be to move east.
2. With the largest g-value, the h-value will be at its smallest meaning the cell has traveled the furthest distance it can from the source for a given f-value and that the estimated distance to the target is minimal. With the smallest g-value, the h-value will be at its largest, meaning the cell has traveled the smallest distance it can for a given f-value. With the first situation, the target can be reached quickly, but the distance that has already been traveled, or the g-value is fixed and cannot be reduced. With the second situation, the target is far away but g-value is small, and so the path to the target can still be altered in case it takes an inefficient route to the target.
3. Whether forward repeated A* or backward repeated A* is better depends on the grid and the number of blocked cells around the starting point. The more dense the number of blocked cells around the starting point, the smaller the initial branching of the tree, which results in less cells visited.

4. Manhattan distances are consistent in grid worlds where the agent can only move in four compass directions because the Manhattan distance is the sum of the vertical and horizontal movements to reach the goal, and the cost to reaching the goal will take at least this many steps. Because of this, Manhattan distances are consistent in grid worlds.