Behaviour Contract

Operation: move Worker using *Minotaur* card
Function: move(Board board, int fromX, int fromY, int toX, int toY)

Precondition:

1. The game has started and is currently in progress.
2. The worker is already initialized by the player.
3. The worker is chosen by the current player of the game.
4. The chosen worker must belong to the current player of the game.
5. The player's status must be 'move'.
6. The new position is not out of bounds of the board.
7. The new position is adjacent to the chosen worker's current position (which means worker can only move one grid to the new position)
8. The new position is not more than one level higher than the worker's current position.
9. The new position must not have a dome.
10. The new position cannot be occupied by the other worker of the current player (which means, if a player has worker1 and worker2, worker1 cannot move to the worker2's position).
11. If the new position is occupied by another player's worker (backward player), the backward player should have space to be forced one space straight backwards. (which means the backward grid is not occupied by other workers, the backward grid doesn't have a dome)
12. If the new position is occupied by another player's worker (backward player), the backward player should not get out of bounds if it is forced one space straight backwards.

Postcondition:

1. The new position of the worker should be updated based on the new position
2. The new position is occupied.
3. The worker's previous position is unoccupied now.
4. The status of current player has been changed from "move" to "build".
5. If the move action causes a backward worker, the new position of the backward worker should be updated one space straight backwards than the new position of the moving worker.
6. If the move action causes a backward worker, the new position of the backward worker should be occupied.

Example:

In a 5x5 grid board, player0 has two workers at (0,0), (1,1), player0 has two workers at (0,1), (1,0), the height of all the grids are 0. Player1 uses Minotaur.

1. Current player is player1. Player1 move worker (1,0)->(2,0). The chosen worker updates its location to (2, 0), (1, 0) will be unoccupied, (2, 0) will be occupied.
2. Current player is player1. Player1 move worker (1,0)->(0, 0). The backward player cannot

move backward (don't have space), so it is a invalid move.

3. Current player is player1. Player1 move worker (0,1)->(1,1). The chosen worker updates its location to (1,1), (0,1) will be unoccupied, (1, 1) will be occupied. The backward player move backward one grid, its position from (1,1) update to (2,1), (2, 1) will be occupied.