1. Finite Differences

   Errors for different finite differences:

   1: Position: 0.057701 meters   Orientation: 0.007574 rads

   0.1: Position: 0.010831 meters   Orientation: 0.024507 rads

   0.01: Position: 0.000674 meters   Orientation: 0.007756 rads

   0.001: Position: 0.000479 meters   Orientation: 2.752757 rads

   Thus, I conclude a finite difference of 0.01 is the best.

2. Checkers:

   is_state_high_quality() is used to see if this state (the one the sim is currently in) is good

   enough to make the next move after calculating the next move. is_state_valid() is more

   expensive to compute and is thus only called every 12 steps to make sure the state is

   okay. It does not need to be called more often than that as the state does not dramatically

   change between the 12 steps.