Exercise 2
Mars Lander
Artificial Intelligence for Games

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1 Random simulations

I have implemented the forward model that allowed me to simulate the course of the game for a given map, as stated in the exercise. I managed to get around $500k$ completely random simulations per second, simulated till the end of the run - if it comes to the random simulations, lander always crashed. It took around 37 steps on average for the lander to crash, so my model did around $13k$ steps per second.

Originally I have managed to do around $400k$ of random simulations per second, but I have decided to precompute and save in an array all values of *sin* and *cos* functions for all angles in range $[-90, 90]$. Because our angles are integers only, arrays are pretty small and using them increased the number of simulations by 25%.