

Yahtzee Strategy Guide

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1 Introduction

This is a guide to the statistically best way to play the game of Yahtzee. This is not a rule book or an instruction manual, so it will assume that you already know the rules of the game. I will try to focus on those aspects of optimal play that are not obvious. I will try to ensure that any advice of strategy I give is the statistical best, and I will calculate all probabilities using computer simulations. This is because mathematically calculating probabilities for the game of Yahtzee is not trivial, and I am no expert on game theory. Additionally, simulating turns of Yahtzee and random rolls gives a satisfactory degree of precision. The same holds true for strategies that are not obvious. I will test and compare different strategies using simulations. The source code for all simulations used can be found here: <https://github.com/PhineasGreene/yahtzee-guide>.

2 Combinations

The first step to playing optimal Yahtzee is to understand the different combinations you can roll and the value and risk associated with each one. The following sections will describe the probability of rolling each pattern and the points that you stand to gain by succeeding in your roll. These values are combined into a "desirability" score *reward/risk*). This will help later on when you need to make important decisions on what to roll for and what to zero out. We will first look at upper section patterns, and then at lower section patterns.

2.1 Upper Section

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2.2 Lower Section

3 Picking What To Go For

4 Rolling Strategy

5 Zero Strategy