

Optimal Stopping Rules

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1. You get to roll a fair die up to n times in succession. After each roll you can decide whether to stop with the value of that roll or continue. Whatever value you stop with is the amount you win. Assuming that your goal is to maximize your expected winnings, what rule should you use to decide whether to stop or not after the first roll of the die when $n = 2$? When $n = 3$? When $n = 4$? When $n = 5$? When $n = 6$?
2. Find the amount you can expect to win if you simply get the largest value rolled in n rolls of the die for $n = 2, 3, 4, 5, 6$.