Title: Roulette and particular probabilities

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Abstract: The thesis formulates roulette as a mathematical problem and examines the best roulette strategies in terms of probability of winning, gambler´s ruin and probability distribution of profit. This game follows Kolmogor axiomatic probability model, therefore the calculations were counted by the basic formulas and axioms. In the calculations of the gambler´s ruin differential equations were also used and built with random walk. In the longest expected run of red (black) were used stochastic processes and extreme value theory. In addition to interesting calculations, the conclusion also contains finding that there is no winning strategy in roulette. Even though one-time probabilities of winning are high, the finding indicates negative mean value of profit.

Keywords: Roulette, Kolmogorov axiomatic probability space