

# How Should You Bet ...if You Must Play Roulette?

American Roulette is played by spinning a wheel with 38 slots and tossing a marble in, which then rests in one of the slots. The slots are numbered 1-36, with two extra slots: 0 and 00. Half of the numbers 1-36 are colored red; half are colored black. The numbers 1-36 are also arranged in three columns. There are many possible bets. Here are some of them. Find the odds against winning and expected value in each case.

a. Evens/Odds: You bet that the number will be either even or odd (note: 0 and 00 are considered neither even nor odd for this bet). This pays 1-1 (i.e., if you bet \$1, you gain \$1 if you win).

b. Columns: You bet that the number will fall in a particular column; there are three columns with 12 numbers in each column (note: 0 and 00 are not in the columns). This pays 2-1 (if you bet \$1, you get \$2 if you win).

c. 0/00: You bet that either 0 or 00 will come up. This pays 17-1.

d. You bet on a single number. This pays 35-1.

e. Five number: You bet that 0,00,1,2 or 3 will come up. This pays 6-1.

Which bet is the best? Which is the worst?