Lesson 22

Optimal betting

Betting strategies

- Play few games, get lucky

- Double down

- Wager same amount each time

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Best:

- Bet the same % of your wealth for games with expected value > 0

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Best: **Kelly strategy**, used by Warren Buffet, etc.

- Bet the same % of your wealth for games with expected value > 0

Kelly Strategy

% of wealth to bet for a game with probability p of winning is:

$$p - (1 - p) \times \frac{\text{Loss amount per \$1}}{\text{Win amount per \$1}}$$

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Answer. $\quad \frac{1}{2} - \left(1 - \frac{1}{2}\right) \times \frac{\text{Loss amount per \$1}}{\text{Win amount per \$1}}$

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Example 2. You lost your bet of $25. But you're a degenerate gambler. How much to bet the second round?

Answer.

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Example 2. You lost your bet of \$25. But you're a degenerate gambler. How much to bet the second round?

Answer. Your wealth is now \$75.

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Answer. Your wealth is now \$75.

You still bet 25% of our wealth of \$75, or \$18.75 this time.

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Note. In practice, bet half or quarter the amount Kelly recommends to reduce risk of zeroing out.