

# Expected Value

## Red Aces Game

It costs \$5.00 for a chance to win \$50.00 in the red aces game. All you must do is select a red ace when picking a card at random.

**Approximate your answer to the nearest hundredths.**

1. What is the cost of losing for this game?
2. What is the net amount for winning this game?
3. What's the probability of winning this game?
4. What's the probability of losing this game?
5. What is the expected value for this game?

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## Roulette

A roulette wheel spins a ball on a wheel in which you have the following possible outcomes  $\{0,00,1,2,3,4,\dots,36\}$



It costs \$2 for a chance to win by **landing on red** for a winning prize of \$20.

**Approximate your answer to the nearest hundredths.**

6. What's the cost of losing this game?
7. What is the net amount for winning this game?
8. What is the probability of winning this game?
9. What is the probability of losing this game?
10. What is the expected value for this game?

It costs \$5 for a chance to win by **landing on green** for a winning prize of \$75.

**Approximate your answer to the nearest hundredths.**

11. What's the cost of losing this game?
12. What is the net amount for winning this game?
13. What is the probability of winning this game?
14. What is the probability of losing this game?
15. What is the expected value for this game?

## Life Insurance

A \$25,000 Life Insurance policy for a 28-year-old female college student costs \$ \$800 for a chance to see 29 years of age. If the probability 28-year-old college students lives to see 29 years of age is 0.975, answer the following questions.

16. How much do you receive for living?

**Approximate your answer to the nearest hundredths.**

17. How much do you receive for not living?

**Approximate your answer to the nearest hundredths.**

18. What's the probability of living?

**Approximate your answer to the nearest thousandths.**

19. What's the probability for not living?

**Approximate your answer to the nearest thousandths.**

20. What's the expected value?

**Approximate your answer to the nearest hundredths.**

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A \$35,000 Life Insurance policy for a 25-year-old male college student costs \$ \$650 for a chance to see 26 years of age. If the probability 25-year-old male college students lives to see 26 years of age is 0.982, answer the following questions.

21. How much do you receive for living?

**Approximate your answer to the nearest hundredths.**

22. How much do you receive for not living?

**Approximate your answer to the nearest hundredths.**

23. What's the probability of living?

**Approximate your answer to the nearest thousandths.**

24. What's the probability for not living?

**Approximate your answer to the nearest thousandths.**

25. What's the expected value?

**Approximate your answer to the nearest hundredths.**