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Thank You!

Cassidy and Chloe - Inspired By Math



Name:____

Prime Time Challenge

Objective: Practice prime factorization while competing with your classmates to become the 'Prime Time Champion'.

Materials:

- One deck of playing cards (remove face cards and jokers)
- Paper and pencil for calculations

Rules:

- 1. The dealer shuffles the deck and deals 5 cards to each player.
- 2. Each player adds up the values of their cards. (Ace = 1, other cards = face value)
- 3. Players then find the prime factorization of their total.
- 4. Scoring:
 - 1 point for each unique prime factor
 - 1 bonus point if the total itself is prime
 - 2 bonus points for the player with the largest prime factor each round
- 5. After scoring, all cards are returned to the deck, reshuffled, and a new round begins.
- 6. Play for a set number of rounds (e.g., 5 rounds) or until a player reaches a target total score.

Example:

Your hand: $7 \bigstar$, $4 \heartsuit$, $8 \bigstar$, $2 \diamondsuit$, $3 \blacktriangledown$ Total: 7 + 4 + 8 + 2 + 3 = 24Prime factorization: $24 = 2^3 \cdot 3$

Score:

- 2 points (for unique prime factors 2 and 3)
- 0 bonus points (24 is not prime)
- Possible 2 bonus points if 3 is the largest prime factor among all players

Total Score:

Challenge: Can you find a way to determine if you have the largest prime factor without seeing other players' hands?