# Trig Card Game

(Review of Trig Identities) by David Puzzle

1. First prepare a deck of cards (suggested cards are listed below).
2. Deal 7 cards to each person (three to four people in a group).
3. Place one card face up for the discard pile, and the remainder of the cards face down.
4. The object of the game is to form a trigonometric identity using 3, 4, 5, 6, or 7 cards. You score one point for each card used, but only the first two players making identities score points (it could be the same player who makes two identities). The other players receive no points for that hand.
5. The person who starts the game (the one to the left of the dealer) can either pick up the top card from the discard pile or the top card from the other pile. She then must discard one card (you must never have more than 7 cards in your hand at the end of your turn).
6. Continue clockwise around the table.
7. The only time that you may put down an identity is when it is your turn. When a player puts down an identity, that player may replace the cards that she has put down with the same number of cards from the top of the pile (you should always have 7 cards in your hand).
8. After two identities have been made, that round is over and cards are re-shuffled. The person who made the second identity becomes the dealer. Play resumes with the player to the left of the dealer.
9. The winner is the player with the most points at the end of the class period.

Deck of Cards

| ***Card*** | ***Number of Each Card*** |
|---|---|
| sin A | 4 |
| cos A | 4 |
| 2 sin A cos A | 1 |
| 1 | 4 |
| + | 5 |
| - | 6 |
| $\sin^2 A$ | 3 |
| $\cos^2 A$ | 3 |
| cos(-A) | 1 |
| sin(-A) | 1 |
| $\sin\left(\frac{\pi}{2} - A\right)$ | 1 |
| $\cos\left(\frac{\pi}{2} - A\right)$ | 1 |
| $2\cos^2 A$ | 1 |
| $2\sin^2 A$ | 1 |
| = | 8 |
| cos(2A) | 3 |
| sin(2A) | 1 |
| cos(A - B) | 1 |
| cos (A + B) | 1 |
| cos(A) cos(B) | 2 |
| sin(A) sin(B) | 2 |
| sin(A+B) | 1 |
| sin(A-B) | 1 |
| sin(A) cos(B) | 2 |
| cos(A) sin(B) | 2 |