INSTRUCTIONS FOR FRACTIONS/DECIMALS

#34676 FRACTIONS/DECIMALS (96 cards)

24® GAME CARDS are printed on both sides, each with a different set of four numbers. FRACTIONS cards have whole numbers 1 through 9 and fractions, DECIMALS cards have whole numbers 1 through 12 and decimals.

Cards are worth 1, 2 or 3 points, rated by difficulty. Look at the corner of a card to tell if it's worth 1 point (1 white dot), 2 points (2 red dots) or 3 points (3 yellow dots). All 9's are "filled in" in red.
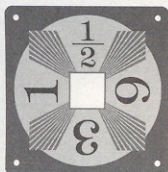

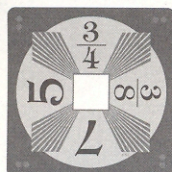1 point   2 points   3 points

OBJECT (both FRACTIONS and DECIMALS cards) is to make 24 with all four numbers on a card. **You can add, subtract, multiply and divide. You must use all four numbers, but use each only once.**
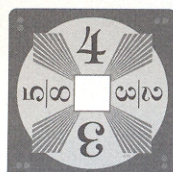
FRACTIONS (48 cards)

EXAMPLES

$3 - 1 = 2$	$5 + 7 = 12$	$2/3 - 5/8 = 1/24$
$2 \times 6 = 12$	$3/4 \div 3/8 = 2$	$4 - 3 = 1$
$12 \div 1/2 = 24$	$12 \times 2 = 24$	$1 \div 1/24 = 24$

INCORRECT SOLUTIONS
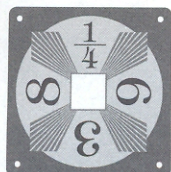
$1/4 \div 1/4 = 1$		**Incorrect:** The number $1/4$ was used twice. Use each number only once.
$6 - 3 = 3$		
$1 \times 3 = 3$		
$3 \times 8 = 24$		
$6 \div 3 = 2$		**Incorrect:** The number 8 was used twice. You can use the result of an operation only once, as well.
$2 \div 1/4 = 8$		
$8 + 8 = 16$		
$16 + 8 = 24$		
$6 - 3 = 3$		**Incorrect:** Only 3 numbers were used. You must use all 4 numbers.
$3 \times 8 = 24$		

PATTERNS TO LOOK FOR ON FRACTIONS CARDS

3	x 8	48	÷ 2	7	÷ 7/24	18	+ 6
4	x 6	21	÷ 7/8	6	÷ 1/4	19	+ 5
2	x 12	20	÷ 5/6	5	÷ 5/24	20	+ 4
9	x 8/3	18	÷ 3/4	4	÷ 1/6	21	+ 3
16	x 3/2	16	÷ 2/3	3	÷ 1/8	22	+ 2
18	x 4/3	15	÷ 5/8	2	÷ 1/12	25	− 1
32	x 3/4	12	÷ 1/2	1	÷ 1/24	27	− 3
36	x 2/3	11	÷ 11/24	12	+ 12	28	− 4
48	x 1/2	10	÷ 10/24	15	+ 9	30	− 6
64	x 3/8	9	÷ 3/8	16	+ 8	54	− 30

DECIMALS (48 cards)

EXAMPLES
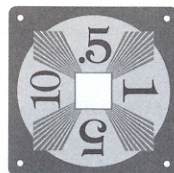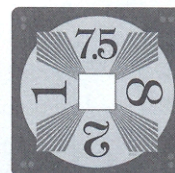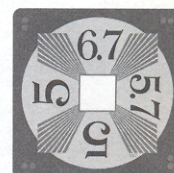
$10 \div 0.5 = 20$	$7.5 \times 2 = 15$	$6.7 - 5.7 = 1$
$5 - 1 = 4$	$15 + 1 = 16$	$5 \times 5 = 25$
$20 + 4 = 24$	$16 + 8 = 24$	$25 - 1 = 24$

INCORRECT SOLUTIONS
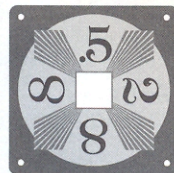
$0.5 + 0.5 = 1$		**Incorrect:** The number 0.5 was used twice. Use each number only once.
$1 \times 2 = 2$		
$2 \times 8 = 16$		
$16 + 8 = 24$		
$2 + 8 = 10$		**Incorrect:** The number 10 was used twice. You can use the result of an operation only once, as well.
$10 + 10 = 20$		
$8 \times 0.5 = 4$		
$20 + 4 = 24$		
$2 \times 8 = 16$		**Incorrect:** Only 3 numbers were used. You must use all 4 numbers.
$16 + 8 = 24$		

PATTERNS TO LOOK FOR ON DECIMALS CARDS

3	x 8	48	÷ 2	12	+ 12	25	− 1
4	x 6	72	÷ 3	13	+ 11	26	− 2
2	x 12	12	÷ 0.5	14	+ 10	27	− 3
2.4	x 10			15	+ 9	28	− 4
48	x 0.5			16	+ 8	30	− 6
				17	+ 7	32	− 8
				18	+ 6	36	− 12
				20	+ 4	42	− 18
				21	+ 3		
				22	+ 2		

HOW TO PLAY WITH TWO OR MORE PLAYERS

1. Any number of players can play. Count off 12 to 24 cards from the deck (use 1 point cards for an easy start). Put cards in center of table. All players are playing at the same time, for the same top card.

2. Win a card by being the first to touch the card and give a correct solution. Once you take your card, the next card is in play.

For tournament-style play, you must announce the pattern (last step of your solution to make 24; i.e. "3 times 8" or "15 plus 9") within 3 seconds of touching the card. Then the complete solution (all three steps) must be completed within 15 seconds. You cannot change the pattern that you stated within the first 3 seconds, and must complete your solution using the same pattern.

3. The winner is the player with the most points after all cards are claimed. Add up the point value of your cards. (Example: If you had four 1 point and three 2 point cards, your score is 10 points.)

Use 1 and 2 point cards to start. Add 3 point cards as you improve.

When you make a false claim by touching the card, but can't quickly give a solution, you lose your right to win that card. The card is returned to the deck to be played later.
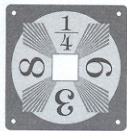
When players can't find a solution: Every card has at least one solution...some have more. If a card stumps all players, that card can be put aside.
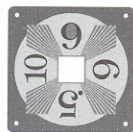
THE SECRET IS TO LOOK FOR PATTERNS

Mathematics is the science and language of patterns. Look for patterns to make 24 and you will excel at the *24* game... and at mathematics. The most common patterns are 3 x 8, 4 x 6 and 2 x 12. Other patterns include 9 ÷ 3/8, 16 x 2/3, 12 ÷ 0.5 and 2.4 x 10. (See Patterns To Look For on the reverse page.)

If you see a **3** on the card, try to make a 8 with the other numbers.

If you see a **6** on the card, try to make a 4 with the other numbers.

$$8 \times \tfrac{1}{4} = 2$$
$$2 + 6 = 8$$
$$8 \times 3 = 24$$

$$0.5 \times 10 = 5$$
$$9 - 5 = 4$$
$$4 \times 6 = 24$$