Instructions for ALGEBRA/EXPONENTS Edition

#37976 ALGEBRA/EXPONENTS (96 cards)

ALGEBRA (48 cards)

ALGEBRA cards are printed on both sides, each with a different set of four numbers or algebraic notations.

OBJECT is to find a value for *x* and/or *y* which, when used with the other numbers on the card, can make 24. **You can add, subtract, multiply and divide. You must use all four numbers (or number equivalent of the algebraic notation), but use each only once.**

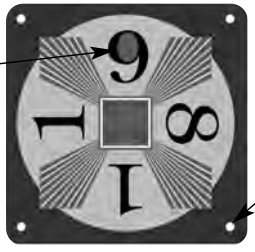
Cards are worth 1, 2 or 3 points, rated by difficulty. Look at the corner of a card to tell if it's worth 1 point (1 white dot), 2 points (2 red dots) or 3 points (3 yellow dots). All 9's are "filled in" in red.

1 point

2 points

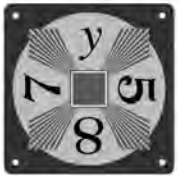
3 points

All 9's are "filled in" in red.



1 Dot card worth 1 point.

ALGEBRA EXAMPLES



$y = 4$
$8 \div 4 = 2$
$7 + 5 = 12$
$2 \times 12 = 24$

$x = 2; \quad y = 3$
$4y/3x = 2$
$4 - 2 = 2$
$2 \times 3 = 6$
$6 \times 4 = 24$

$x = 4; \quad y = 2$
$7x/y^2 = 7; \quad 2y/(x-3) = 4$
$7 - 5 = 2$
$8 - 2 = 6$
$6 \times 4 = 24$

(Algebra continued)

NOTE: *x* and y can be the same number.

INCORRECT SOLUTIONS

$y = 2$
$5 + 5 = 10$
$10 - 2 = 8$
$6 \div 2 = 3$
$8 \times 3 = 24$

Incorrect: The number 5 was used twice. Use each number only once.

$5 - 2 = 3$
$3 + 3 = 6$
$6 + 6 = 12$
$12 \times 2 = 24$

Incorrect: The number 3 was used twice. You can use the result of an operation only once.

$2 + 2 = 4$
$4 \times 6 = 24$

Incorrect: Only 3 numbers were used. You must use all four numbers.

EXPONENTS (48 cards)

EXPONENTS cards are printed on both sides, each with a different set of four numbers.

OBJECT is to make 24 with all four numbers on a card. **You can add, subtract, multiply and divide, AND you must use one (and only one) exponential operation. You can square, cube, take the square root or cube root of a number on a card or a computed number. You must use all four numbers, but use each only once.**

EXPONENTS EXAMPLES

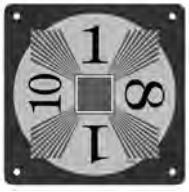
$1 + 1 = 2$
$2^3 = 8$
$4 - 1 = 3$
$8 \times 3 = 24$

$\sqrt[3]{8} = 2$
$16 - 2 = 14$
$14 + 10 = 24$
$24 \times 1 = 24$

$\sqrt{4} = 2$
$6 - 2 = 4$
$4 \times 7 = 28$
$28 - 4 = 24$

(Exponents continued on back page.)

Incorrect solutions



$\sqrt[3]{8} = 2$
$10 + 10 = 20$
$20 + 2 = 22$
$22 + 1 = 23$
$23 + 1 = 24$

Incorrect: The number 10 was used twice. Use each number in a wheel only once.

$\sqrt[3]{8} = 2$
$2 \times 10 = 20$
$2 + 20 = 22$
$22 + 1 = 23$
$23 + 1 = 24$

Incorrect: The number 2 was used twice. You can use the result of an operation only once.

Remember: You must use ONLY ONE exponential operation for a solution to be correct.

$10 - 1 = 9$
$\sqrt{9} = 3$
$3 \times 8 = 24$

Incorrect: Only 3 numbers were used. You must use all four numbers.

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 and 2 point cards for an easy start.) Put cards in the center of the 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.

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

Patterns that make the target number 24 on Algebra and Exponents cards.

12 + 12	27 – 3	59 – 35	18 ÷ 3/4
14 + 10	28 – 4	64 – 40	16 ÷ 2/3
15 + 9	30 – 6	70 – 46	12 ÷ 1/2
16 + 8	32 – 8	81 – 57	9 ÷ 3/8
18 + 6	34 – 10	3 x 8	6 ÷ 1/4
20 + 4	36 – 12	4 x 6	4 ÷ 1/6
21 + 3	40 – 16	2 x 12	3 ÷ 1/8
22 + 2	44 – 20	9 x 8/3	2 ÷ 1/12
24 + 0	49 – 25	16 x 3/2	1 ÷ 1/24
25 – 1	54 – 30	48 ÷ 2	

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