

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

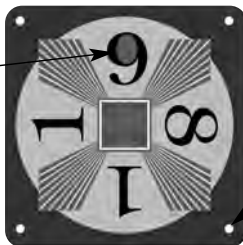


2 points



3 points

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



1 Dot card worth 1 point.

ALGEBRA EXAMPLES



$$y = 4$$

$$8 \div 4 = 2$$

$$7 + 5 = 12$$

$$2 \times 12 = 24$$



$$x = 2; y = 3$$

$$4y/3x = 2$$

$$4 - 2 = 2$$

$$2 \times 3 = 6$$

$$6 \times 4 = 24$$



$$x = 4; y = 2$$

$$7x/y^2 = 7; 2y/(x-3) = 4$$

$$7 - 5 = 2$$

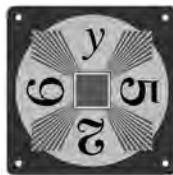
$$8 - 2 = 6$$

$$6 \times 4 = 24$$

(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.

$$2 + 2 = 4$$

$$4 \times 6 = 24$$

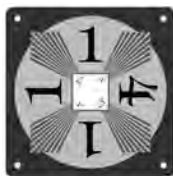
Incorrect: Only 3 numbers were used. You must use all four numbers.

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



$$1 + 1 = 2$$

$$2^3 = 8$$

$$4 - 1 = 3$$

$$8 \times 3 = 24$$



$$\sqrt[3]{8} = 2$$

$$16 - 2 = 14$$

$$14 + 10 = 24$$

$$24 \times 1 = 24$$



$$\sqrt{4} = 2$$

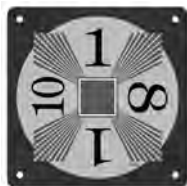
$$6 - 2 = 4$$

$$4 \times 7 = 28$$

$$28 - 4 = 24$$

(Exponents continued on back page.)

INCORRECT SOLUTIONS



$$\sqrt[3]{8} = 2$$

$10 + 10 = 20$ **Incorrect:** The number
 $20 + 2 = 22$ 10 was used twice. Use
 $22 + 1 = 23$ each number in a wheel
 $23 + 1 = 24$ only once.

$$\sqrt[3]{8} = 2$$

$2 \times 10 = 20$ **Incorrect:** The number 2
 $2 + 20 = 22$ was used twice. You can
 $22 + 1 = 23$ use the result of an
 $23 + 1 = 24$ operation only once.

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

$10 - 1 = 9$ **Incorrect:** Only 3 numbers
 $\sqrt{9} = 3$ were used. You must use
 $3 \times 8 = 24$ all four numbers.

HOW TO PLAY WITH TWO OR MORE PLAYERS

- 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.
- 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.
- 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.

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

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(Age 9+) #33976

Variables
(Age 9+) #38978

Fractions/Decimals
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Integers
(Age 12+) #33576

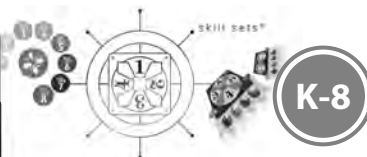
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