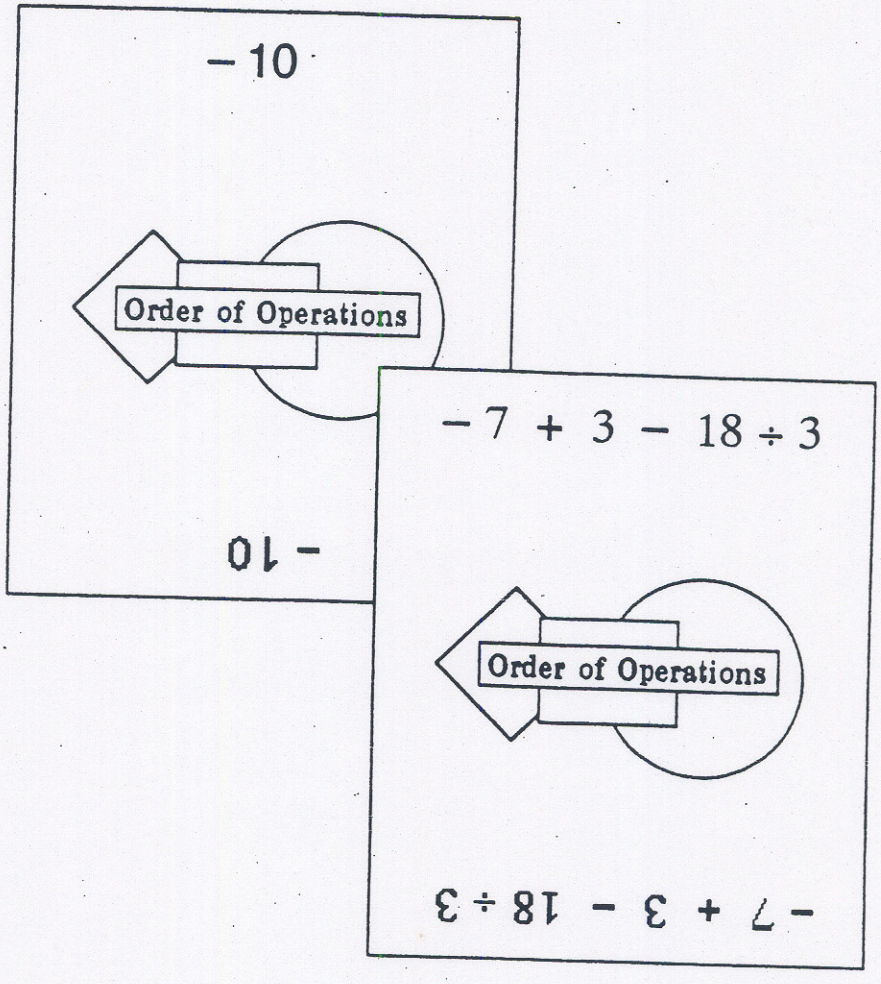
Order of Operations



Developed and Presented

by

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Order of Operations

Topic: Using the order of operations to simplify integral expressions

Grade Level: Algebra 1

Number of players: 3 – 5

Materials needed: One set of "Order of Operations" cards

Procedure:

- Separate the cards into two sets. One set contains unsimplified expressions with integers and the other set contains the value of the expressions.
- Place the unsimplified expressions in an array face down on the table. Shuffle the other set and deal it out one card at a time to each player until all the cards are dealt.
- Players take turns turning over a card in the array to see if it matches one in their hand. If the card matches a card in his/her hand, the player picks up the card from the array and makes a book. The player takes another turn. The pairs are placed face up in front of the player who picked them up. If the card does not match one in the player's hand, it is turned face down again and play passes to the next player.
- Play passes around the group until all the unsimplified expressions are picked up.
- If a player makes and error, he/she loses that turn and must replace the unsimplified expression in the array.

Alternate Game 1:

- The cards can be used to play a rummy like game. Shuffle the deck of cards and deal 5 cards to each player. The remaining cards are placed face down as a draw deck.

- When play begins one card from the draw deck is turned face up to start a discard deck.

- The first player can either pick up the face up card or draw from the draw deck.

- After drawing or picking up the discard deck, the player makes any books (one with an expression and one with the value of the expression) that he/she can and places them face up on the table in front of him/her.

- The player then discards a card from his/her hand and play passes to the next player.

- Play continues in the same manner until all the books are made. The player with the most books is the winner.

Alternate Game 2:

- The game can be played like the children's game of "Go Fish".

$12 \cdot 3 - 10$

$12 \cdot 3 - 10$

$12 \div 3 - 8$

$12 \div 3 - 8$

$18 - 12 \div 3$

$18 - 12 \div 3$

$3 - 10 \div 2$

$3 - 10 \div 2$

$3 - 7 + 8 \div 2$

$3 - 7 + 8 \div 2$

$-4 - 8 + 14 \div 2$

$-4 - 8 + 14 \div 2$

$-7 + 3 - 18 \div 3$

$-7 + 3 - 18 \div 3$

$11 - 4 + 16 \div 2$

$11 - 4 + 16 \div 2$

$-4 - 8 + 12 \div 2$

$-4 - 8 + 12 \div 2$

26

Order of Operations

26

-4

Order of Operations

-4

14

Order of Operations

14

-2

Order of Operations

-2

0

Order of Operations

0

-5

Order of Operations

-5

-10

Order of Operations

-10

15

Order of Operations

15

-6

Order of Operations

-6

$(18 - 12) \div 3$

$(18 - 12) \div 3$

$-32 \div (3 - 7)$

$-32 \div (3 - 7)$

$-6(3 - 10)$

$-6(3 - 10)$

$-4 - (8 + 14) \div 2$

$-4 - (8 + 14) \div 2$

$4 - (7 + 8) \div 3$

$4 - (7 + 8) \div 3$

$5 + (8 - 10) \div 2$

$5 + (8 - 10) \div 2$

$-4 - (6 + 12) \div 2$

$-4 - (6 + 12) \div 2$

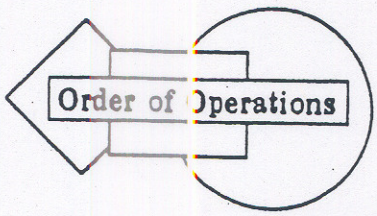
$11 - (4 + 16) \div 2$

$11 - (4 + 16) \div 2$

$-7 + (3 - 18) \div 3$

$-7 + (3 - 18) \div 3$

42



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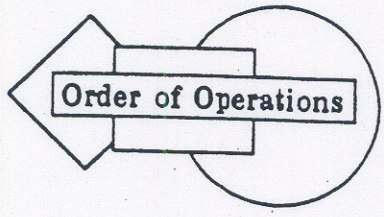

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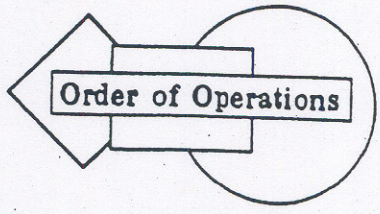

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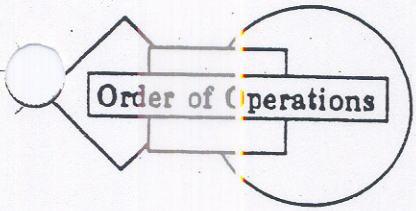

4

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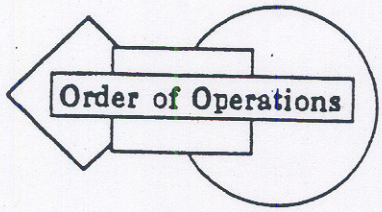
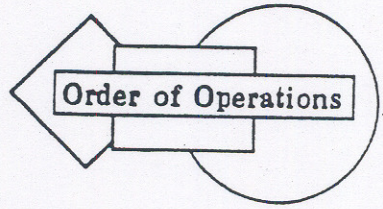


−1

−15



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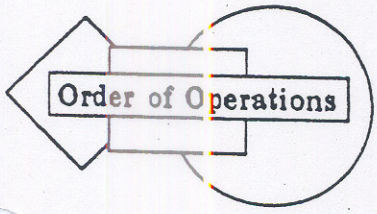
−12



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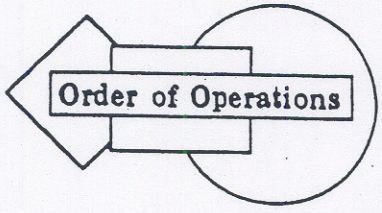

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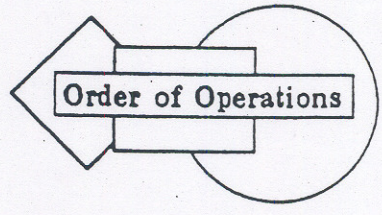
−13



−13

$18 - (-15) \div 5 + 6$

$18 - (-15) \div 5 + 6$

$\{18 - (-15)\} \div (5 + 6)$

$\{18 - (-15)\} \div (5 + 6)$

$2\{8 + (3 - 5)\} - 7$

$2\{8 + (3 - 5)\} - 7$

$-21 \div 7 - (-15)$

$-21 \div 7 - (-15)$

$7 - 4(8 - 14) \div 2$

$7 - 4(8 - 14) \div 2$

$\{2(4 - 7) - 12\} \div 2$

$\{2(4 - 7) - 12\} \div 2$

$6 \div 3 - 9 \bullet 4$

$6 \div 3 - 9 \bullet 4$

$18 - 27 \div 9 \div (-1)$

$18 - 27 \div 9 \div (-1)$

$-81 \div (3 - 21) \div 2$

$-81 \div (3 - 21) \div 2$

5

5

3

3

27

27

−9

−9

19

19

12

12

9

9

6

6

−34

−34