

Order of Operations

There are times when you will need to perform several different mathematical operations in order to get the correct answer. In other words, you will not always be given just a series of numbers to add or just a series of numbers to multiply. Most of the time, math problems will require a mixture of operations. When you have a problem that involves a combination of mathematical functions, it is important that you perform each operation in the correct order.

There is a very simple order of operations for all mathematical problems:

1. First, perform all calculations that are in parentheses.
2. Next, perform all multiplication and division, working from left to right.
3. Lastly, perform all addition and subtraction, working from left to right.

Consider the following problem:

$$20 + 7 - (10 + 11) + 4 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

Looking at the above problem, you would first have to start by adding the numbers in parentheses, which would make the problem:

$$20 + 7 - 21 + 4 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

Next, you would perform the multiplication and division functions, starting from left to right. This would further simplify the problem to:

$$20 + 7 - 21 + 24 + 3 = \underline{\hspace{2cm}}$$

At this point in time, you would begin performing the addition and subtraction:

$$20 + 7 - 21 + 24 + 3 = \underline{\hspace{2cm}}$$

$$27 - 21 + 24 + 3 = \underline{\hspace{2cm}}$$

$$6 + 24 + 3 = \underline{\hspace{2cm}}$$

$$30 + 3 = 33$$

The answer to the problem is 33. If the correct order of operations is not followed, then the answer will be incorrect. If you had simply completed each mathematical operation in the order that it appeared in, you would have gotten a very different answer:

Name _____

Date _____

Order of Operations (Cont'd)

$$20 + 7 - (10 + 11) + 4 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

$$27 - (10 + 11) + 4 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

$$17 + 11 + 4 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

$$28 + 4 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

$$32 \times 6 + 9 \div 3 = \underline{\hspace{2cm}}$$

$$192 + 9 \div 3 = \underline{\hspace{2cm}}$$

$$201 \div 3 = 67$$

As you can see, if you do not perform the order of operations in the correct order, the answer you get will be incorrect.

Consider the following problem:

$$45 + (98 - 68) \div (12 + 13) \times 6 = \underline{\hspace{2cm}}$$

Again, you would need to begin by performing all of the calculations in parentheses:

$$45 + 30 \div (12 + 28) \times 26 = \underline{\hspace{2cm}}$$

$$45 + 30 \div 15 \times 6 = \underline{\hspace{2cm}}$$

You would then perform all division and multiplication:

$$45 + 2 \times 6 = \underline{\hspace{2cm}}$$

$$45 + 12 = \underline{\hspace{2cm}}$$

The last step would be to perform the addition, which would give you your answer:

$$45 + 12 = 57$$

Name _____

Date _____

Order of Operations Questions

Solve the following (Use the space below the question to work out your answer):

1. $7 + (4 - 2) - 3 = \underline{\hspace{2cm}}$

2. $36 + 9 \div 3 = \underline{\hspace{2cm}}$

3. $(21 - 7) + (4 \times 3) = \underline{\hspace{2cm}}$

4. $17 - 2 \times 6 = \underline{\hspace{2cm}}$

5. $96 - 36 - (2 + 6) \times 3 = \underline{\hspace{2cm}}$

6. $8 \times 2 + (28 - 16) = \underline{\hspace{2cm}}$

7. $9 \div 3 - (12 \div 4) = \underline{\hspace{2cm}}$

8. $72 - 5 \times 3 + 7 = \underline{\hspace{2cm}}$

Name _____

Date _____

Order of Operations Answers

Solve the following (Use the space below the question to work out your answer):

1. $7 + (4 - 2) - 3 = \underline{6}$

2. $36 + 9 \div 3 = \underline{39}$

3. $(21 - 7) + (4 \times 3) = \underline{18}$

4. $17 - 2 \times 6 = \underline{5}$

5. $96 - 36 - (2 + 6) \times 3 = \underline{36}$

6. $8 \times 2 + (28 - 16) = \underline{28}$

7. $9 \div 3 - (12 \div 4) = \underline{0}$

8. $72 - 5 \times 3 + 7 = \underline{64}$