

Order of Operations or Please Excuse My Dear Aunt Sally

What is the correct order of operations? Why use it? What is PEMDAS?

Order of operations refers to which operations should be performed in what order. A long time ago, people just decided on an order in which operations should be performed. It has nothing to do with magic or logic. Some people decided to adopt a way, and it has stuck ever since. It just makes communication a lot easier.

To remember the conventional order of operations, you can think of

PEMDAS

(You might remember this as "Please excuse my dear Aunt Sally.")

1. Parentheses
2. Exponents
3. Multiplication and Division
4. Addition and Subtraction

This means that you should do what is possible within parentheses first, then exponents, then multiplication and division (from left to right), and then addition and subtraction (from left to right). If parentheses are enclosed within other parentheses, work from the inside out.

Examples:

$$(5 + 5^2) - 9 =$$

$$(5 + 25) - 9 =$$

$$30 - 9 = 21$$

$$2*(9-16/4+7*2^2)=$$

$$2*(9-16/4+7*4)=$$

$$2*(9-4+28)=$$

$$2*(5+28)=$$

$$2*(33) = 66$$

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Math Bowl – Exponents, Order of Operations

1. Evaluate, following the proper order of operations

$$3^2 + 2 \times 8 + 0.6 =$$

2. Using the order of operations, solve

$$(2^2 + 4^2) + 5.5 - 2^3 =$$

3. Using order of operations, solve

$$3 \times (4 + 5) - 3 \div 3 + 17 =$$

4. What digit is in the hundreds place in the number 5^{11} ?
(Hint: $5^2 = 5 \times 5$ $5^4 = 5 \times 5 \times 5 \times 5$)

Order of Operations**Show your work.****Worksheet # 1**

Name: _____

1. $3 \times (2 \times 4^3) \div 4$

2. $(4^3 + 2 - 1)$

3. $(5 \times 3) \times 1 + 5$

4. $(7^2 - 2^3 - 6)$

5. $(5^3 + 7) \times 2$

6. $4 - (9 + 2^2 \div 2)$

7. $6 - (9 + 8^2 \times 1^3) + 5$

8. $(2 \div 4 \times 8)$

1. $4^2 + (1 \times 5 + 7^2) + 8$

2. $6^2 \div (2 - 8) + 1 - 8$

3. $(6^2 \times 7) \div 2$

4. $9 - (5^2 + 7) \div 2$

5. $(6 + 8 - 2)$

6. $(1 - 4^2) \times 2$

7. $5 + (4^3 + 1) + 8$

8. $(4 + 8) + 1$

Please complete the problems below:

1. $(2^2 + 4^2) + 5$

2. $(6^2 \times 9) + 9$

3. $(5 + 5^2) - 9$

4. $(2^2 \times 8 + 5)$

5. $(8 \times 1) \times 6$

6. $8 + (6 + 1 + 4)$

7. $3^2 + (7 + 1) + 2$

8. $(9 + 5 - 3 \times 2)$