


## Concept: Order of Operations

Name:


### COMPUTER COMPONENT

**Instructions:** In  follow the **Content Menu** path:

**Fractions > Order of Operations**

 Work through all Sub Lessons of the following Lessons **in order**:

- *Order in Addition*
- *Order in Multiplication*
- *Why Use Order of Operations?*
- *BEDMAS*
- *Example Questions*

 As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

### NOTES

#### 1. *Order in Addition*

**Conclusion:** *Addition is performed in any order.*

#### 2. *Order in Multiplication*

**Conclusion:** *Multiplication is performed in any order.*

#### 3. *Why Use Order of Operations?*

*An order of operations ensures a consistent sequence for equal/results.*

#### 4. *BEDMAS* is one of the acronyms used to help us remember the order of operations.

*Describe each step in BEDMAS below.*

B ⇒ *Brackets*

E ⇒ *Exponents*

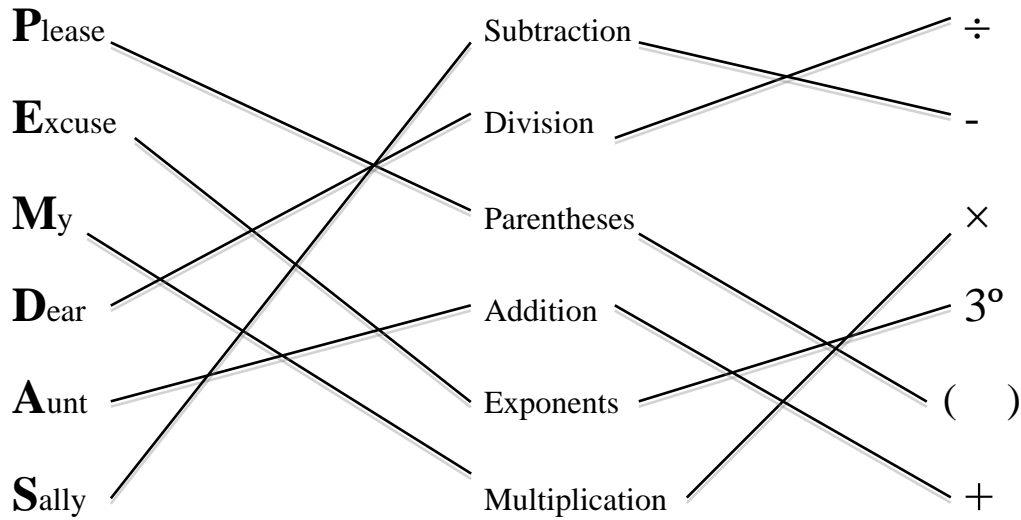
D ⇒ *Division*

M ⇒ *Multiplication*

A ⇒ *Addition*

S ⇒ *Subtraction*

5. Please **Excuse My Dear Aunt Sally** is another acronym used to help us remember the order of operations. *Use a straight line to connect the acronym with the correct operation and symbol.*



6. Does the 'Order of Operations' really affect the outcome of a question?

$$\text{Is } \frac{5}{6} + \frac{4}{9} \times \frac{3}{8} = \quad \text{equal to} \quad \left(\frac{5}{6} + \frac{4}{9}\right) \times \frac{3}{8} =$$

Explain your thinking: **Yes, the 'Order of Operations' does affect the outcome of a question.**

$$\frac{5}{6} + \frac{12}{72} = \frac{60}{72} + \frac{12}{72} = \frac{72}{72} = 1 \quad \text{is not equal to} \quad \left(\frac{15}{18} + \frac{8}{18}\right) \times \frac{3}{8} = \frac{23}{18} \times \frac{3}{8} = \frac{69}{144}$$

## OFF COMPUTER EXERCISES

1. Use your knowledge of the ‘Order of Operations’ to answer the following questions. *Simplify and show all of your thinking.*

$$(a) \frac{1}{2} \div \frac{2}{3} = \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$$

$$(b) \frac{2}{5} \div \frac{4}{7} = \frac{2}{5} \times \frac{7}{4} = \frac{14}{20} = \frac{7}{10}$$

$$(c) \frac{4}{5} \div \frac{8}{15} = \frac{4}{5} \times \frac{15}{8} = \frac{1}{1} \times \frac{3}{2} = \frac{3}{2}$$

$$(d) \frac{3}{5} \div \frac{9}{25} = \frac{3}{5} \times \frac{25}{9} = \frac{1}{1} \times \frac{5}{3} = \frac{5}{3}$$

$$(e) \frac{7}{8} \div \frac{21}{16} = \frac{7}{8} \times \frac{16}{21} = \frac{1}{1} \times \frac{2}{3} = \frac{2}{3}$$

$$(f) \frac{12}{15} \div \frac{18}{20} = \frac{12}{15} \times \frac{20}{18} = \frac{2}{3} \times \frac{4}{3} = \frac{8}{9}$$

$$(g) \frac{16}{35} \div \frac{10}{25} = \frac{16}{35} \times \frac{25}{10} = \frac{8}{7} \times \frac{5}{5} = \frac{8}{7}$$

$$(g) \frac{63}{121} \div \frac{21}{22} = \frac{63}{121} \times \frac{22}{21} = \frac{3}{11} \times \frac{2}{1} = \frac{6}{11}$$

2. **Create** two questions for your friends to answer. *Did they remember to apply their knowledge of the ‘Order of Operations’?*

*(Responses will vary.)*