# TOPIC 1 - Number Theory

### Objective: To have students understand the order of operations – BIMDAS /PIMDAS etc.

How Do I Remember It All ... ? PEMDAS! BEMDAS etc???

|  |  |
| --- | --- |
| **P** | **P**arentheses first ( Brackets) |
| **E** | **E**xponents (ie Powers and Square Roots, etc.) |
| **MD** | **M**ultiplication and **D**ivision (left-to-right) |
| **AS** | **A**ddition and **S**ubtraction (left-to-right) |

Divide and Multiply rank equally (and go left to right)

Add and Subtract rank equally (and go left to right)

**REVIEW: Types of Numbers**

**Real Numbers:** The entire number system. The largest set in the numerical system

**Rational Numbers:** All numbers including decimal and fractions.

**Integers:** Positive and negative numbers including zero. (Number Line)

**Whole Numbers:** All positive integers including zero.

**Counting Numbers:** All positive integers excluding zero

**Irrational Numbers:** A number that cannot be written as a simple fraction - the decimal goes on forever without repeating.

**Radical/ Square Root:** An expression that has a square root, cube root, etc. The symbol is √

**Type 1: Examples to go over:**





**Type 2: Examples to go over:**

1. $3\frac{1}{2}÷\left(2\frac{1}{8}-\frac{3}{4}\right)$
2. $3\frac{1}{4}+5\frac{1}{2}÷\frac{3}{8}$
3. 6 × 4 - 12 ÷ 3 – 8
4. 20 - (3 × 23 - 5)
5. (5 + 2)2 - 9 × 3 + 23
6. (12 ÷ 3 + 4) - (42 - 6 × 2)
7. (52 - 5) / (42 + 8 - 7 × 2)
8. (7 - √9) × (42 - 3 + 1)
9. ![[image]]()
10. It takes $1\frac{3}{4}$ minutes to wrap a parcel and half a minute to address it. How long does it take to wrap and address 8 similar parcels?
11. My bag contains 2 books each of weight $\frac{3}{4} kg$ and 3 folders each of weight $\frac{5}{12}kg$. What is the total weight in my bag? What fraction of the total weight is books?