📘 Topic: **Ordering Numbers by Magnitude and Comparison Symbols**

🔢 1. **What is Magnitude?**

Magnitude refers to the **size or value of a number, regardless of its sign** (i.e., whether it's positive or negative).

- Example:

  The magnitude of **−5** is **5**.

  The magnitude of **8** is **8**.

  The magnitude is always **positive**.

➕➖ 2. **Comparing Numbers**

We compare numbers by looking at:

- Their **sign** (positive numbers are always greater than negative ones)

- Their **place value** (hundreds > tens > units)

- **Decimals and fractions** may require conversion or placing on a number line.

🔣 3. **Symbols for Comparison**

Symbol	Meaning	Example	Explanation
=	Equal to	4 = 4	Both numbers are the same
≠	Not equal to	3 ≠ 5	3 is not the same as 5
>	Greater than	7 > 2	7 is more than 2
<	Less than	-1 < 3	-1 is less than 3
⩾	Greater than or equal	6 ⩾ 6	6 is equal to 6 or more
⩽	Less than or equal	2 ⩽ 5	2 is less than or equal to 5

📊 4. Examples: Comparing and Ordering Numbers

a) Ordering Positive Integers

Arrange **5, 2, 8, 1** in **ascending** and **descending** order:

- **Ascending (small to big):** 1, 2, 5, 8
- **Descending (big to small):** 8, 5, 2, 1

b) Ordering Negative Integers

Arrange **−2, −5, −1, 0** in ascending order:

- **Answer:** −5, −2, −1, 0

    (Remember: −5 is less than −2, since it's further left on the number line)

c) Using Symbols

Compare:

- 4 and 9 → **4 < 9**
- −3 and 0 → **−3 < 0**
- 7 and 7 → **7 = 7**
- 5 and 2 → **5 > 2**
- −2 and −6 → **−2 > −6**

d) Decimals

Order **3.1, 2.9, 3.01, 3.11** ascending:

- **Answer:** 2.9, 3.01, 3.1, 3.11

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🧠 5. Tips for Comparing

- **Negative numbers:** The more negative a number is, the **smaller** it is.
- **Decimals:** Compare digit by digit from left to right.
- **Fractions:** Convert to decimals or use a common denominator.
- Use a **number line** to visualize.

✅ 6. Practice Problems

1. Fill in the blanks with the correct symbols:

    a) 6 ___ 4
    b) −3 ___ −8
    c) 0.7 ___ 0.77
    d) −5 ___ 5
    e) 10 ___ 10

2. Order these numbers from **least to greatest**:

    −4, 0, 3.5, −1, 2