Irrational Numbers

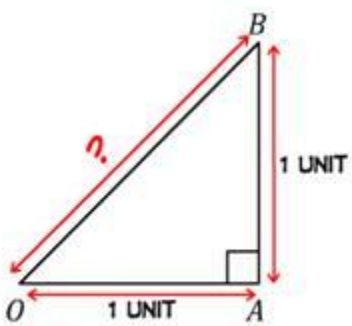
You might have learnt about representing various **types of numbers** such as **Natural numbers, Whole numbers**, **Integers**, **Rational numbers** on the **number line**.

Rational Numbers: Numbers that can be written in the form of $\frac{p}{q}$, where **p, q** $\in Z$ and $q \neq 0$.

The **collection of Rational numbers** is denoted by **Q**. Between any **two rational numbers** there exists **infinitely many rational numbers**.

Irrational numbers: Numbers which cannot be expressed in the form of $\frac{p}{q}$**,** where **p, q** $\in Z$ **and** $q \neq 0$.
The **collection of irrational numbers** is denoted by $\overline{Q}$**.**
Pythagoras Theorem: In a **right-angled triangl**e, the **square of the hypotenuse** is equal to **the sum of the squares of the other two sides**.

Using this theorem we can represent the **irrational numbers** on the **number line**.



Base $(OA) = 1$ unit
Height $(AB) = 1$ unit

$$OB^2 = OA^2 + AB^2$$

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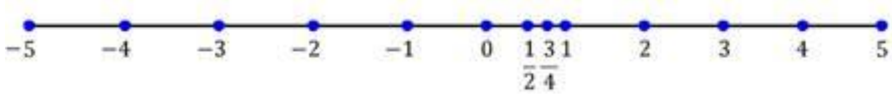

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