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Mathematics is the science that deals with the logic of **shape**, **quantity** and **arrangement**. It is the building block for everything in our **daily** lives, including mobile devices, architecture, art, money, engineering.

Since the **beginning** of recorded history, mathematic discovery has been at the **forefront** of every civilized society, and in use in the **primitive cultures**. The needs of math **arose** based on the wants of society. The more complex a society, the more complex the mathematical needs. From **counting** to **calculating** the position of the Sun.

**Mathematicians** developed **arithmetic** as the oldest branch which includes **basic** operations, **addition**, **subtraction**, **multiplication**, and **division**. As civilizations developed, **they** began to work with **geometry** that deals with properties of **shapes** and **sizes** and has many practical applications as **computing areas** and **volumes** to make **angular** measurements. Geometry is used in everything from home construction to fashion and interior **design**.

Geometry went hand in hand with **algebra**. The Persian **polymath** Muḥammad ibn Mūsā al-Khwārizmī established the basis for innovation in algebra and trigonometry. His systematic approach to solving **linear** and **quadratic equations** led to *algebra*. The term *algebra* itself comes from the **title** of his book *ʿIlm al-jabr wa l-muqābala*. Where **arithmetical operations** and formal manipulations are **applied** to **abstract symbols**. In other words, unknown quantities are used along with numbers. These unknown quantities are represented by letters or symbols. The use of letters helps to **generalize** the **formulas**, write it and helps to find the unknown values in the algebraic expressions and **equations**.

The **equation** is the most basic notion in mathematics, a formal statement of two sides of a mathematical expression are equal—as in the simple equation  $x + 3 = 5$ —and that both sides of the equation can be simultaneously manipulated in order to “solve” the equation. Yet, as simple and natural as such a notion may appear today, its acceptance first **required** the development of numerous mathematical ideas.

Mathematics developed from counting, calculation, measurement, and the systematic study of the shapes and motions of physical objects. The research required to solve mathematical problems can take years or even centuries of sustained inquiry.

Math is very important in our **daily** lives. In reality, it is implemented everywhere. **Besides**, it is useful for solving problems that occur in the universe.

**1- Pre-reading tasks:** Answer the following questions, before reading the text.

- Discuss the title of the text.
- What do you think the text will be about?

**2- While reading tasks:**

- Silently, read the text progressively, building your understanding, paragraph after paragraph.
- Search for the meaning of the words that are in bold character and give synonyms for the underlined ones in the text while you are reading.
- Write the main idea of each paragraph you have finished reading.
- Discuss these ideas with your teacher.
- Give a title to the text.

**Answer the following question:**

1. According to the text, what are the mentioned branches of mathematics ?
2. What are the main contributions of al-Khwārizmī to mathematics ?
3. How is the unknown value represented in an equation?

Are the following statements true or false?

- 1- Primitive societies relied on calculating .
- 2- Arithmetic is more concerned about angles and measurements .
- 3- Every mathematical concept and idea which is reliable in the field took a long period to be accepted.
- 4- We need mathematics to solve different problems in our daily lives ?

**3- Homework:**

- Do the same reading tasks at home with the paragraphs that you have not discussed in the classroom.
- Practice the pronunciation of the words that are in bold character in the text.
- Give further information about trigonometry\_.
- Give examples of **linear** and **quadratic equations**.

Try to solve these equations:

$$x + 3 = 5 \times 4$$

$$5 + x + 21 = 3 + 6 \times 5$$

- [aɪ] diphthong.

/eɪ/ is a diphthong sound which means it is a combination of two vowel sounds that are pronounced within the same syllable. The /eɪ/ sound is a combination of /e/ and /ɪ/

Like vowels the diphthongs are all made through the mouth and are voiced which means that you vibrate your vocal chords to make the sound.

as you say the /eɪ/ sound your mouth will start on the position of the /e/ sound and finish on the position of the /ɪ/ sound.

you will find the eɪ sound spelled many different ways. But it is often spelled with the letters "a", as in the words:

- take /teɪk/
- way /weɪ/
- same /seɪm/
- case /keɪs/

What are the words from the text above which have this diphthong