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MATH IS FUN

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A. ABSTRACT

In this paper will tell you math is fun. More people think that math really hard but math will be fun if we want to know more. For me math makes me want to push my limit so I always want to know more and more about it. This paper will tell you about historical math for the first spot and the second will be as usual like the general of math like variable, and geometry. The study of math within early civilizations was the building blocks for the math of the Greeks, who developed the model of abstract mathematics through geometry. Greece, with its incredible architecture and complex system of government, was the model of mathematic achievement until modern times.

Keywords: History of Mathematic, Variable, and Geometry

B. INTRODUCTION

Mathematics is the science that deals with the logic of shape, quantity and arrangement. Math is all around us, in everything we do. It is the building block for everything in our daily lives, including mobile devices, architecture (ancient and modern), art, money, engineering, and even sports.

Several civilizations — in China, India, Egypt, Central America and Mesopotamia — contributed to mathematics as we know it today. The Sumerians were the first people to develop a counting system. Mathematicians developed arithmetic, which includes basic operations, multiplication, fractions and square roots. The Sumerians' system passed through the Akkadian Empire to the Babylonians around 300 B.C. Six hundred years later, in America, the Mayans developed elaborate calendar systems and were skilled astronomers.

Algebra offered civilizations a way to divide inheritances and allocate resources. The study of algebra meant mathematicians were solving linear equations and systems, as well as quadratics, and delving into positive and negative solutions. Mathematicians in ancient times also began to look at number theory. With origins in the construction of shape, number theory looks at figurate numbers, the characterization of numbers, and theorems.

C. METHOD

1. HISTORY OF MATHEMATIC

Mathematics (from Greek: μάθημα, *máthēma*, 'knowledge, study, learning') includes the study of such topics as quantity (number theory), structure (algebra) space (geometry), and change (mathematical analysis). It has no generally accepted definition. Mathematics is essential in many fields, including natural science, engineering, medicine, finance, and the social sciences. Applied mathematics has led to entirely new mathematical disciplines, such as statistics and game theory. Mathematicians engage in pure mathematics (mathematics for its own sake) without having any application in mind, but ractical applications for what began as pure mathematics are often discovered later.

Evidence for more complex mathematics does not appear until around 3000 BC, when the Babylonians and Egyptians began using arithmetic, algebra and geometry for taxation and other financial calculations, for building and construction, and for astronomy. The most ancient mathematical texts from Mesopotamia and Egypt are from 2000 to 1800 BC. Many early texts mention Pythagorean triples and so, by inference, the Pythagorean theorem seems to be the most ancient and widespread mathematical development after basic arithmetic and geometry. It is in Babylonian mathematics that elementary arithmetic (addition, subtraction, multiplication and division) first appear in the archaeological record. The Babylonians also possessed a place-value system, and used a sexagesimal numeral system which is still in use today for measuring angles and time.

Beginning in the 6th century BC with the Pythagoreans, the Ancient Greeks began a systematic study of mathematics as a subject in its own right with Greek mathematics. Around 300 BC, Euclid introduced the axiomatic method still used in mathematics today, consisting of definition, axiom, theorem, and proof. His textbook *Elements* is widely considered the most successful and influential textbook of all time. The greatest mathematician of antiquity is often held to be Archimedes (c. 287–212 BC) of Syracuse. He developed formulas for calculating the surface area and volume of solids of revolution and used the method of exhaustion to calculate the area under the arc of a parabola with the summation of an infinite series, in a manner not too dissimilar from modern calculus. Other notable achievements of Greek mathematics are conic sections (Apollonius of Perga, 3rd century BC), trigonometry Hipparchus of Nicaea (2nd century BC), and the beginnings of algebra (Diophantus, 3rd century AD).

More than a century ago, Hieronymus George Zeuthen (1902, Furinghetti, Radford, 2002) wrote a book about the history of mathematics. Of course, this was not the first book on the topic, but what made Zeuthen's book different was that it was intended for teachers. Zeuthen proposed that the history of mathematics should be part of teachers' general education. His humanistic orientation fitted well with the work of Cajori, 1894 who, more or less by the same time, saw in the history of mathematics an inspiring source of information for teachers. Since then, mathematics educators have increasingly made use of the history of mathematics in their lesson plans, and the spectrum of its uses has widened. For instance, the history of mathematics has been used as a powerful tool to counter teachers' and students' widespread perception that mathematical truths and methods have never been disputed. The biographies of several mathematicians have been a source of motivation for students (Furinghetti, Radford, 2002).

2. VARIABLE

Have you ever played poker? Sometimes when I play, I may look at my cards and be one card short of a good hand. Maybe I have three jacks. That's pretty good, but if I just had one more jack, I'd have four of a kind, which is great. Unfortunately, a deck of cards only has four of each card, so the odds of getting all four jacks in your hand are small. But what if we were playing with wild cards? A wild card is a card that can be whatever you want it to be. It could be a jack for me or an ace for someone else. It's a card that has an undetermined value. This is just like a variable in algebra.

A **variable** is a symbol that represents an unknown number. It will be equal to a number, but you don't know what that number is yet. Until you figure it out, you use the symbol.
The variable you most often see is *x*. But a variable can really be any letter or symbol that doesn't otherwise have a number associated with it.
Think again about wild cards. A wild card has something printed on it, but its real meaning is determined by the other cards in your hand. In an algebraic equation, a variable's real meaning is determined by the things around it.

Many variables have been determined to provide large effects on mathematics achievement. Of these variables, mathematics anxiety is explained as one of the most significant reasons preventing mathematics achievement. Richardson and Suinn (1972) define mathematics anxiety as a feeling of stress and fear that prevent mathematical problem-solving and calculation in a wide range of regular life and academic occasions.

Variable, In algebra, a symbol (usually a letter) standing in for an unknown numerical value in an equation. Commonly used variables include x and y (real-number unknowns), z (complex-number unknowns), t (time), r (radius), and s (arc length). Variables should be distinguished from coefficients, fixed values that multiply powers of variables in polynomials and algebraic equations. In the quadratic equation $ax^2 + bx + c = 0$, x is the variable, and a, b, and c are coefficients whose values must be specified to solve the equation. In translating word problems into algebraic equations, quantities to be determined can be represented by variables.

a. What is Equation?

An equation says that two things are equal. It will have an equal sign "=" like

this: X + 2 = 6

That equation says what is on the left (x+2) is equal to what is on the right (6) so
an equation is like a statement "this equals that".

b. Parts of an Equation

So, people can talk about equations, there are **names** for different parts. Here we have an equation that says 4x – 7 equals 5, and all its parts:

4x – 7 = 5

A **Variable** is a symbol for a number we don't know yet. It is usually a letter like x or y. A number on its own is called a **Constant**. A **Coefficient** is a number used to multiply a variable (**4x** means **4** times **x**, so **4** is a coefficient). Variables on their own (without a number next to them) actually have a coefficient of 1 (**x** is
really **1x**).

Moreover, Jupri, Drijvers and van den Heuvel-Panhuizen (2014) stated that one of common mistakes on understanding the concept of linear equation is applying arithmetic operation. For instance, to find the value of x in the equation 3x = 5, it has to be 5 divided by 3. However, the students commonly come with x = 5 – 3. To learn the topic of solving linear equation with one variable, students struggle to balance conceptual and procedural knowledge (Magruder, 2012). Linear equations are often difficult for students in transition from a concrete mathematics to an abstract concept. So, a learning that bridges the students' thinking from abstract to real is needed.

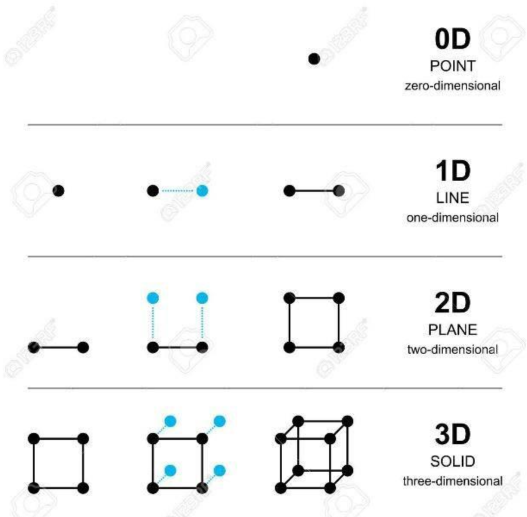
3. GEOMETRY

Geometry (fromthe AncientGreek: γεωμετρία; *geo-* "earth", *metron* "measurement"
) is, with arithmetic, one of the oldest branches of mathematics. It is concerned with properties of space that are related with distance, shape, size, and relative position of figures. A mathematician who works in the field of geometry is called a geometer.
Later in the 19th century, it appeared that geometries without the parallel

postulate (non-Euclidean geometries) can be developed without introducing any contradiction. The geometry that underlies general relativity is a famous application of non-Euclidean geometry.

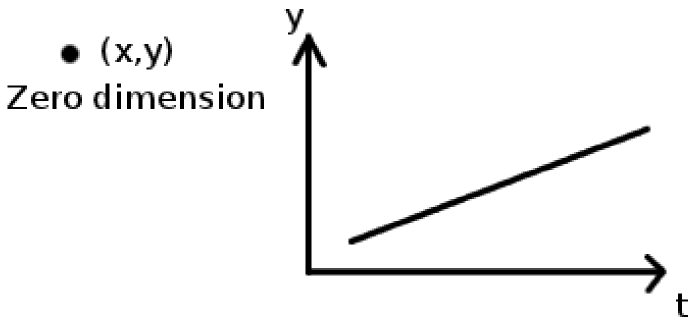
Since then, the scope of geometry has been greatly expanded, and the field has been split in many subfields that depend on the underlying methods—differential geometry, algebraic geometry, computational geometry, algebraic topology, discrete geometry (also known as *combinatorial geometry*), etc.—or on the properties of Euclidean spaces that are disregarded—projective geometry that consider only alignment of points but not distance and parallelism, affine geometry that omits the concept of angle and distance, finite geometry that that omits continuity, etc. Dimensions in mathematics are the measure of the size or distance of an object or region or space in one direction. In simpler terms, it is the measurement of the length, width, and height of anything. Any object or surroundings or space can be:

1. Zero Dimensional
2. One Dimensional
3. Two Dimensional
4. Three Dimensional



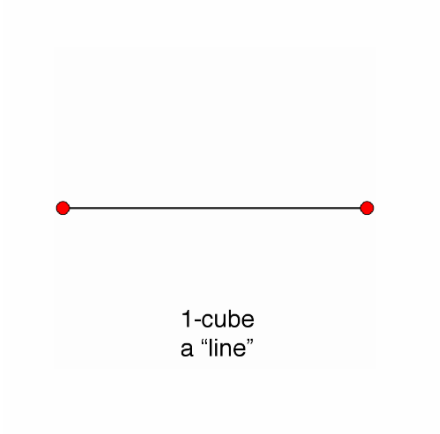
1. **Zero Dimensional**

   a zero-dimensional topological space (or nildimensional) is a topological space that has dimension zero with respect to one of several inequivalent notions of assigning a dimension to a given topological space.



2. **One Dimensional**

   A line segment drawn on a surface is a one-dimensional object, as it has only length and no width



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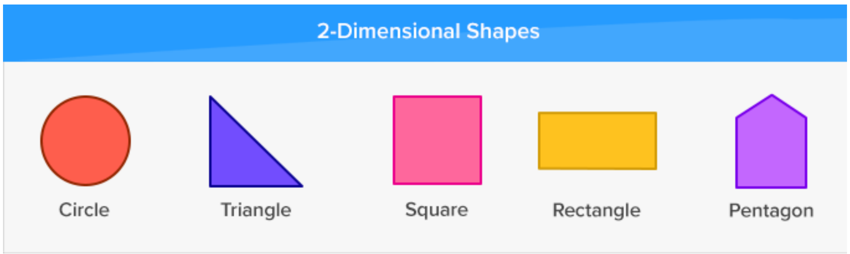
3. **Two Dimensional**

   The 2-dimensional shapes or objects in geometry are flat plane figures that have two dimensions – length and width. Two-dimensional or 2-D shapes do not have any thickness and can be measured in only two faces.

   A square, circle, rectangle, and triangle are examples of two-dimensional objects. We can classify figures on the basis of the dimensions they have.

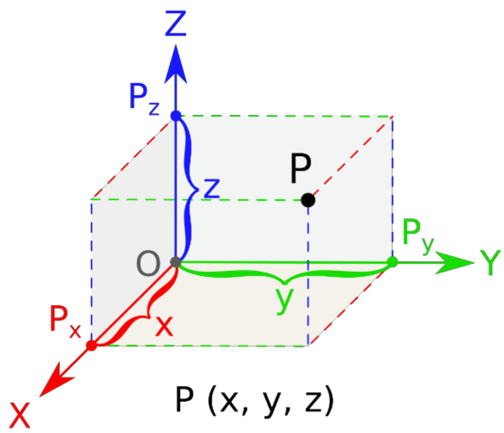


Source: https://cdn-skill.splashmath.com/panel-uploads/GlossaryTerm/277097a6a870457e90553ed24cf46042/15480512 33_Two-dimensional-2-D-shapes-circle-triangle-square-polygons.png

4. **Three Dimensional**

In geometry, three-dimensional shapes are solid figures or objects or shapes that have three dimensions – length, width, and height. Unlike two-dimensional shapes, three-dimensional shapes have thickness or depth.

A cube and cuboid are examples of three-dimensional objects, as they have length, width, and height.



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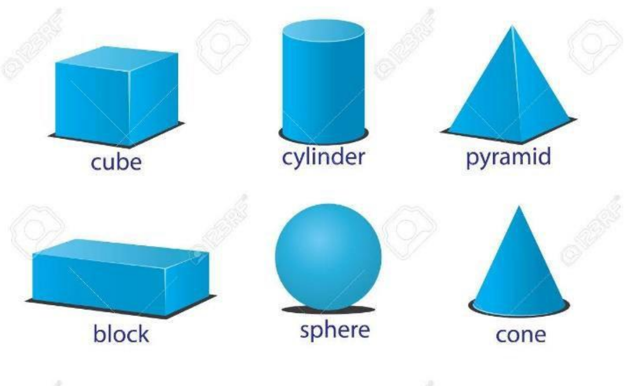
The attributes of the cuboid are faces, edges, and vertices. The three dimensions compose the edges of a 3D geometric shape.

Some examples of three-dimensional shapes:



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D. CONCLUSION

In 21. century the importance of education appears to be rising with each passing day. Persons who renews itself, can think creatively, problem-solving process can be applied, as well as the information provided to accept the most accurate information rather than self-critical thinking that can reach investigate individuals can be successful. Now we can learn Mathematic with many devices and all of the subject of mathematics are on the internet and we can find it. If we do not know how to solve it. We can search how to solve it or we can ask teacher or friends. I hope all of you can love mathematics because math is fun.

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