An axiom is a rule or statement **that is taken to be true**, and which does not require any proof to believe, to serve as a starting point for further reasoning and arguments.

**The rules we set are called axioms.** We never prove the axioms, rather we use the axioms to prove a theory.

For example, We cannot think playing chess, football, cricket, basketball etc. without the set of rules

Example in geometry, point, straight line, two parallel point never intersect each other, the earth turns 360 degree, everyday. In mathematics, N={0,1,2,3,..} is a set of natural numbers; 0+1=1+0 & 1.0=0 are the axioms.

In simpler words, these **are truths that form the basis for all other derivations and have been derived from the basis of everyday experiences.**

Instead, the role of axioms is to systematize uncontroversial facts that mathematicians can accept from a wide variety of philosophical positions & mathematicians use their energy to prove the theorems instead of arguing philosophy.

Believing something to be true and acting accordingly but not proving it.

Exempli gratia:

a) The holy Qur’an was revealed through revelation.

b) Trees have life.

c) Belief in religion.

d) The fate of human.

e) Firmament.

f) The moon revolves around the earth.

h) The gravitational acceleration at the center of the earth is zero. Highest in the polar region and lowest in the equator. i) Consider a real line which lies between -∞ to +∞. j)

The range of normal distribution is -∞ to +∞. k)

Example :

* A point represents a single position, it has no dimension.
* A line segment is obtained by joining two points.
* real number +real number =real number.
* Circle has zero eccentricity.

**These are the axioms because we accept the statement without any controversy and needs no proof.**

There are also many examples of axioms in mathematics such as:-

* For any two number an axioms could be that a + b = b + a
* For any three number an axioms could be that a+ (b + c)=(a + b)+c

axioms are the rules that are logically derived. We follow the rules to make the logical system easy.

**Then if we start with different axioms, we will get a different kind of mathematics but the logical argument will be the same.**

**So, every area of mathematics has its own set of basic axioms.**

Axioms is defined as a statement that is accepted as true and correct, called as a theorem in mathematics.

**Axioms present itself as self-evident on which we can base any arguments or inference.**

**A mathematical statement**, that is not needed to prove and very close to universal truth is known as Axiom. Therefore, they are statements that are standalone and indisputable in their origins.

**For example, “a hen lays one egg every day” it’s a mathematical statement, where the assumption is a hen can lay only one egg per day. Why it’s not half or quarter, why we counted it full one! And this “one” is the Axiom. We have no proof of why it is one. We just universally accepted this.**

Formal example, A+B=B+A; for all Real numbers.

**Axioms assumption are used throughout mathematics and not particularly connected to Geometry. An Axiom is the basic to build the theory of mathematics.**