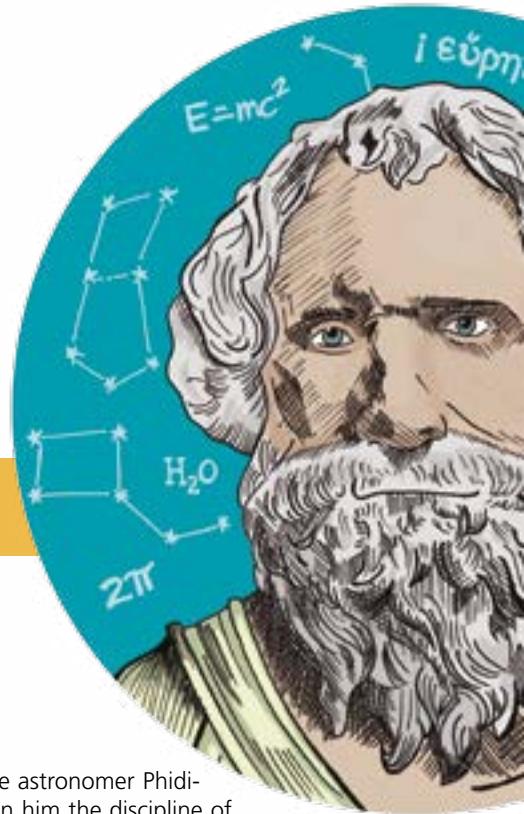


Adapted by Ingenio
English version: Danny Jean Paul Mejía Holguín

TWELVE IDEAS YOU MUST KNOW ABOUT ARCHIMEDES



Have you ever wondered what the origin of the famous π (pi) number is? The one we studied in geometry. Well, our Ingenio's guest is a human being who is said to have been the first to achieve a method of approximation and, that is why and because of all his wits that he is recognized as the greatest Greek mathematician and one of the most important scientist and Engineer of all times: Archimedes.

1 He was born in Syracuse, Italy, in 287 BC, more than 21 centuries ago.

2 He was educated in Alexandria, Egypt. There he was a student of the astronomer and mathematician Conon de Samos. Since then, mathematics and astronomy have been studied already, a legacy of the Greeks and the Arabs.

3 His father was the astronomer Phidias, who instilled in him the discipline of the researcher, which made the people recognize him as prodigious and Plutarch said about him that he had a "superhuman intelligence."

4 The mathematician's best-known anecdote tells how he invented the method for determining the volume of an irregular object such as the new triumphal crown of Hiero II, tyrant governor of Syracuse.

5 Hiero II asked Archimedes to determine if it was made of solid gold or if the goldsmith had added silver, the idea was to solve the problem without damaging the crown. He was taking a bath when he noticed that the water level had upraised in the tub when he entered, and thus discovered how to calculate the volume of the crown.



6 When he solved the problem Archimedes was very excited and ran through the streets of the city, shouting “eureka” (in ancient Greek: “**εὕρηκα**” meaning, “I have found it!”) without realizing that he was totally naked.

7 This is how he created his treatise on floating bodies, the principle of hydrostatics and known as the Archimedes’ principle.

8 During the Roman conquest of Sicily, he put his inventions at the order of the state and some of his mechanical devices like the legendary “catapults and systems of mirrors to flare up ships” that were used in the defense of Syracuse.

9 Plutarch said that Archimedes was so enthusiastic about the power he was able to obtain with his machines, capable of lifting large weights with a small effort that assured the king “Give me the place to stand, and I shall move the earth”.

Archimedes’ principle:

“The upward buoyant force that is exerted on a body immersed in a fluid, whether fully or partially submerged, is equal to the weight of the fluid that the body displaces and acts in the upward direction at the center of mass of the displaced fluid.”

This force is called the hydrostatic thrusts or Archimedes, and is measured in Newton (according to International System of Units).

10 Two of his studies are observed in his books: Equilibrium of Planes, in which he based the law of the lever and determined the center of gravity of parallelograms, triangles, trapezes and that of a segment of parabola. Moreover, the second On the Sphere and Cylinder in which he used a preceding method of integral calculus to determine the surface of a sphere and establish the relation between a sphere and the circumscribed cylinder in it.

11 Some of his works in mathematics and mechanics survive, including The Floating Bodies, The Sand reckoner, The Measurement of a Circle, The Spiral Stairs, The Sphere and The Cylinder, etc. He put on display all his rigor and imagination for the advances of mathematical knowledge.

12 After the invasion of Syracuse during the Second Punic War, Archimedes was killed by the sword of a Roman soldier who found him while drawing a mathematical diagram in the sand, but was so engrossed in his calculation that he responded to the intruder: “Do not disturb my diagrams”, and the soldier attacked him.

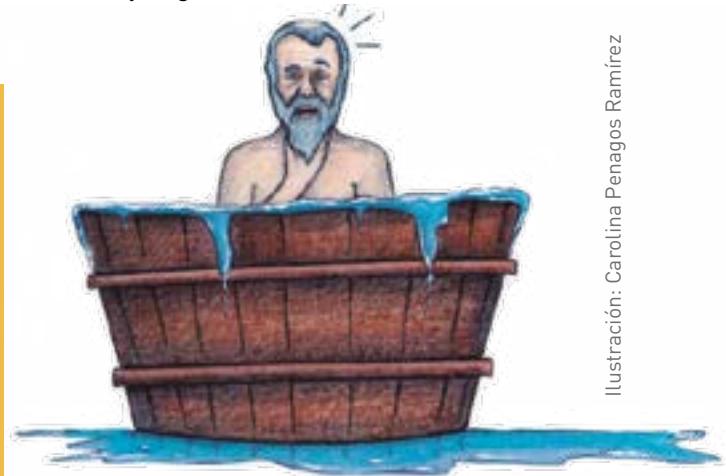


Ilustración: Carolina Penagos Ramírez

*These 12 ideas about Archimedes life resulted from an exhaustive search on different sources of public domain. The text was prepared, reviewed and approved by the Editorial Committee of the Ingenio Magazine.