

Abu 'Alī al-Ḥasan ibn al-Ḥasan ibn al-Haytham



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Ibn al-Haytham

Name : Hasan ibn al-Hasan ibn al-Haytham Abu Ali Basri.

Born : in Basra ((354 AH / 965 AD)) The period was the golden age of Islam.

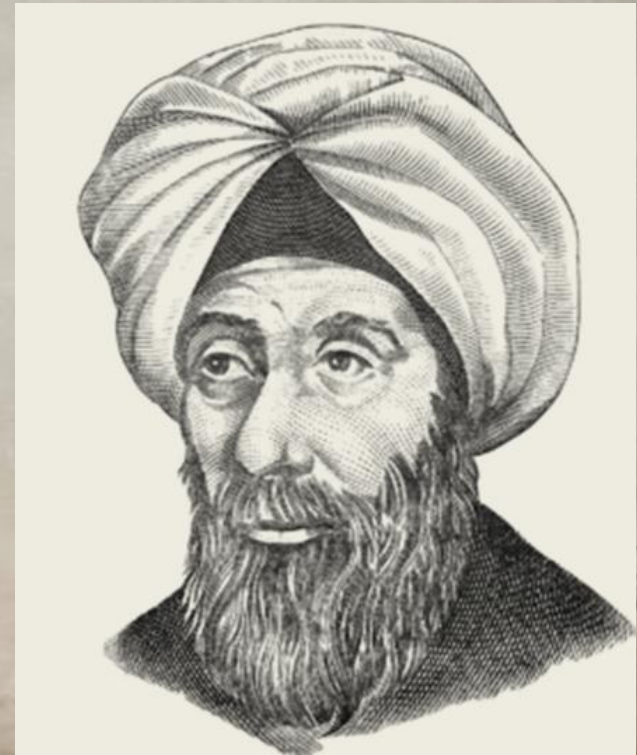
Died: in Cairo in 430 AH.

Cognomen :

- Al Basri ((Relative to his hometown of Basra))
- Ptolemy II (Latin: Ptolemaeus Secundus)
- Alhazen

Specialization

- Engineer.
- Astronomer .
- Athletic.
- Doctor holds a degree in medicine.



Ibn al-Haytham

discovered the work of Ibn al-Haytham in

- in the National Library of France in Paris
- Bodleian Library in Oxford
- library of Leiden

most important works

- Ibn al-Haytham proved the fact that the light comes from the objects to the eye, and not vice versa as it was believed at that time.
- it attributed to the principles of the invention of the camera.
- the first to explain the eye full autopsy and explained the functions of its members.

In mathematics, adopted Ibn al-Haytham in his work the work of Euclid and Thebit.



Ibn al-Haytham Works

- Other works on physics

- Optical treatises
- Celestial physics
- Mechanics

- Astronomical works

- On the Configuration of the World
- Model of the Motions of Each of the Seven Planets

- Other work

- Influence of Melodies on Souls of Animals
- Engineering
- Philosophy
- كتاب المناظر

- Mathematical works

- Geometry
- Number theory



Ibn al-Haytham – Wilson Theorem for the Prime numbers

- If the number $(n-1)! + 1$ divisible by n , then its prime number.



1) $n =$ natural number.

2) Natural number = Prime number + composite Number

3) If n natural number, Then $n =$

Prime number or composite Number.

4) Proof by contradiction:

Let $n =$ composite Number, Then $n = ab$

5) Which a & b natural number

$1 > a$ & $b > n$



5) If $(n-1)!$ divisible by a & b , then it's divisible by n

6) Then $(n-1)! + 1$ Not divisible by n

7) This is a contradiction of the term, Then it's Prim Number.

8) Example:

$$[(5-1)! + 1] / 5$$

$$[(4)! + 1] / 5$$

$$[24 + 1] / 5$$

$$25 / 5 = 5 \text{ (Prim Number)}$$



Exercise:

1) Is 11 a prime number?

$$(n-1)! + 1 / n$$

$$n = 11$$

$$= (11-1)! + 1 / n$$

$$= (10)! + 1 / 11$$

$$= 3628801 / 11$$

$$= 329891$$

11 is a prime number



Exercise:

2) Is 18 a prime number?



Resources

- <http://en.wikipedia.org/wiki/Alhazen> taken in: 14-3-2015
- <http://www.az-ex.net/news.php?readmore=216> taken in: 14-3-2015
- <http://ar.wikipedia.org/wiki/%D9%85%D8%B3%D8%A3%D9%84%D8%A9%D8%A7%D8%A8%D9%86%D8%A7%D9%84%D9%87%D9%8A%D8%AB%D9%85> مسائل ابن الهيثم- 14 مارس 2015
- <http://en.wikipedia.org/wiki/Alhazen> Taken in: 14-3-2015
- <https://medium.com/@hosaa/-f8099984acd9> Taken in: 14-3-2015
- Mathematical problem solving/ written in: 25. 7 .2015/ taken in: 17.3.2015/ <http://math-topics.blogspot.com/2012/07/l-n-1-1-n-n.html>
- <http://kenanaonline.com/users/blackhole/posts/128364>
- <http://almanalmagazine.com>
- <http://ar.wikipedia.org>

