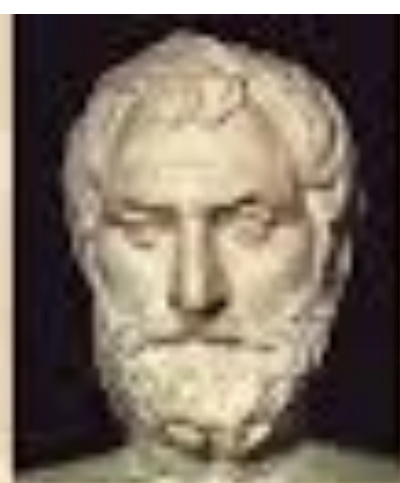


GREEK MATHEMATICIAN, THALES OF MILETUS



Thales of Miletus

625 BC

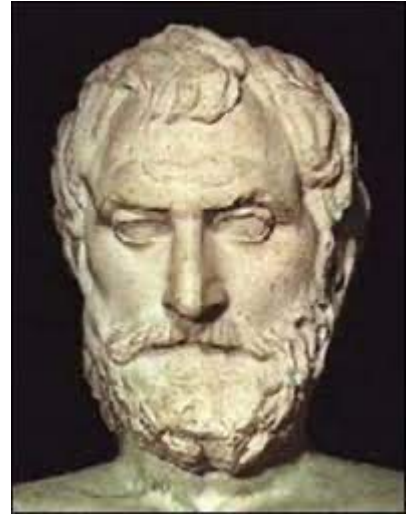


- **First Philosopher**
 - Used organized, formal arguments
- **First Mathematician**
 - Used formal proof method
 - Learned from Mesopotamians and Egyptians (who kept records only)
- **First Scientist**
 - "All events, even extraordinary ones, can be explained in natural terms which can be understood by humans."
 - Asked why things happened and then tried to find a rational answer
 - "What is fundamental and does not change?"
 - Assumed that an order existed
 - Underlying principle or basic material is called *arché* in Greek

Thales is recognized for breaking from the use of mythology to explain the world and the universe, instead explaining natural objects and phenomena by offering naturalistic theories and hypotheses.

Almost all the other pre-Socratic philosophers followed him in explaining nature as deriving from a unity of everything based on the existence of a single ultimate substance instead of using mythological explanations.

Aristotle regarded him as the founder of the Ionian School of philosophy and reported Thales' hypothesis that the originating principle of nature and the nature of matter was a single material substance: water.



THALES WAS EMPLOYED BY VILLAGERS TO KEEP RECORD OF MAIN EVENTS HAPPENING IN THE VILLAGE.

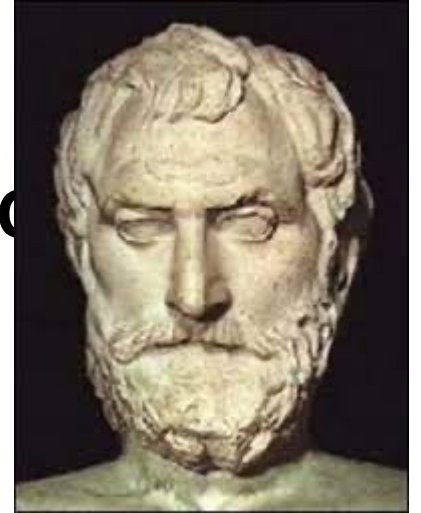
HE RECORDED RAIN ,WIND, WATER FLOW, CROPS GROWN ETC

IN ONE OF THE YEARS THERE WAS NO RAIN. PEOPLE COULD NOT GROW BARLEY. THEY NEEDED MONEY .

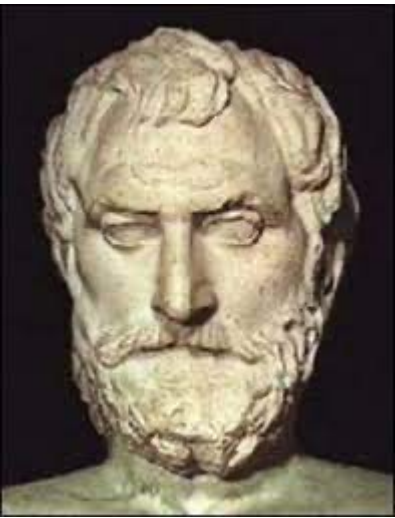
THEY BEGAN TO SELL WHATEVER THEY HAD. THALES PURCHASED ONLY THEIR OIL PRESSES. NOTHING ELSE. SO HE STOCKED QUITE A NUMBER OF OIL PRESSES.

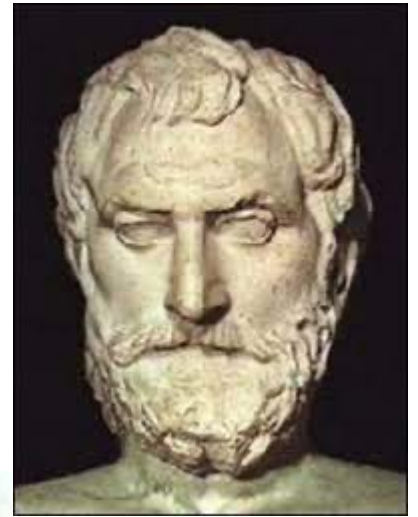
BUT WHEN OLIVE SEED PICKING SEASON ARRIVED THERE WERE NO OIL PRESSES WITH PEOPLE .

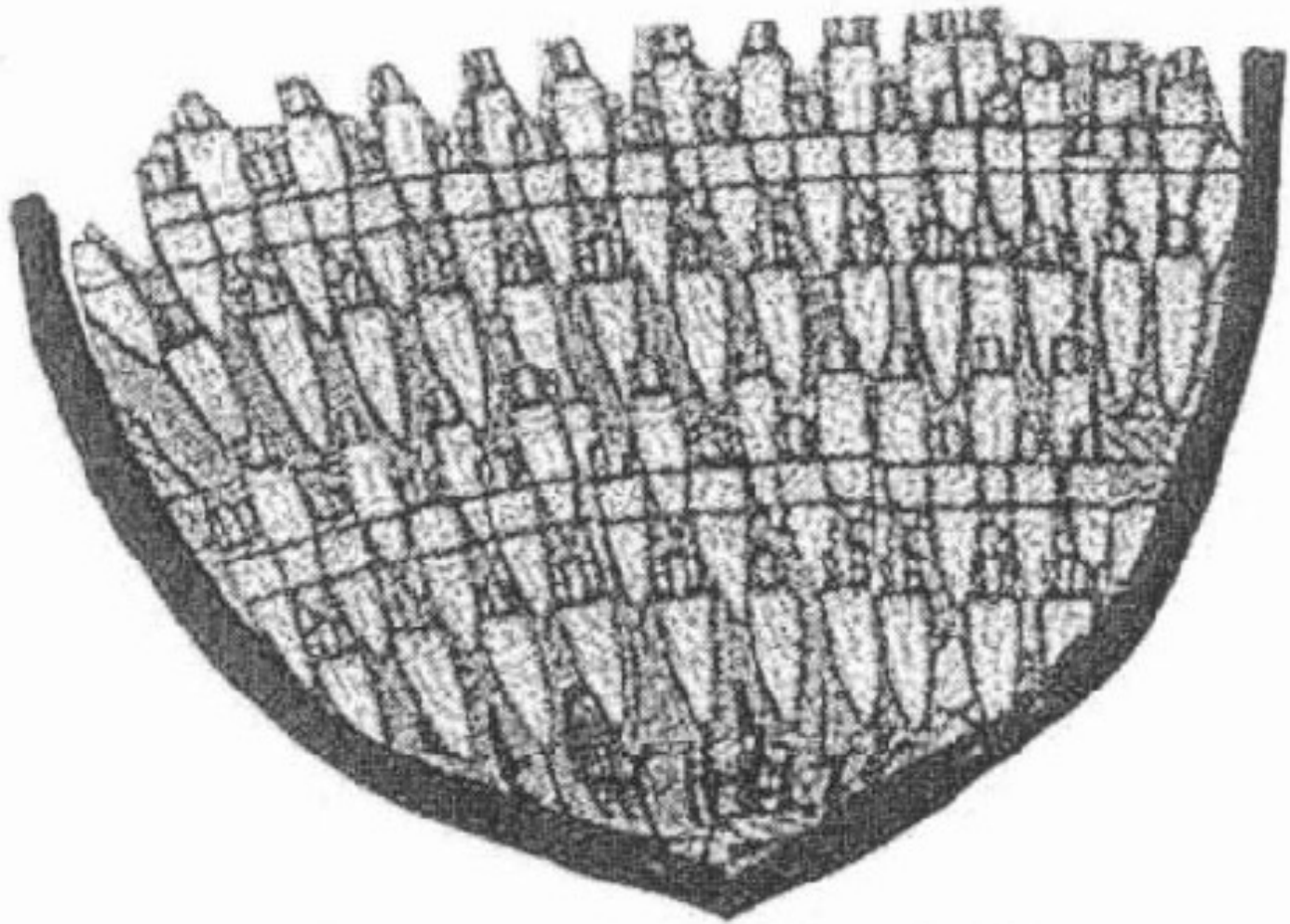
THALES SOLD THEM ON CREDIT IN EXCHANGE FOR OIL TO BE PRODUCED. AT THE END OF THE SEASON HE HAD LARGE STOCK OF OIL BARRELS.



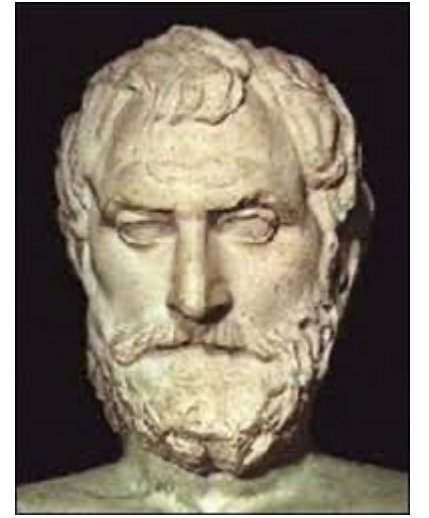






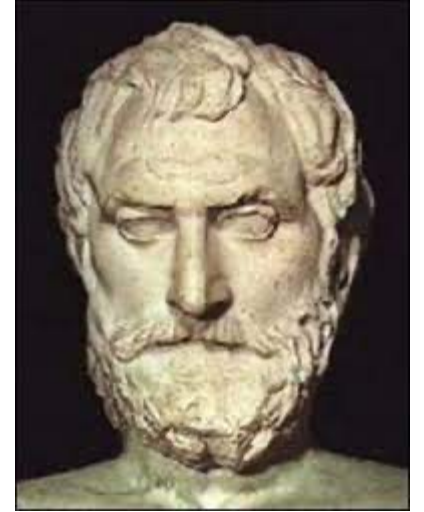


OLIVE OIL JARS
STACKED ON A
GREEK SHIP



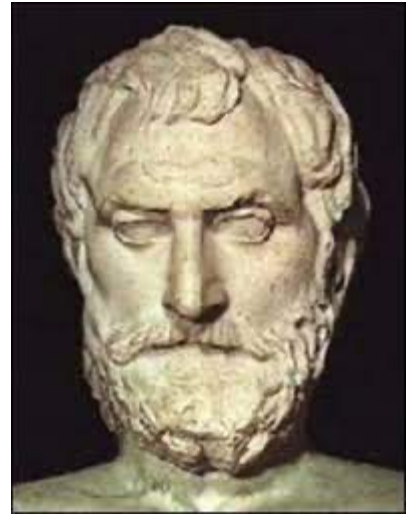
THERE WERE NO BUYERS FOR OIL IN GREECE. SO THALES WENT TO EGYPT TO SELL OIL.

HE WENT TO ALEXANDRIA AND WAS ASTONISHED TO SEE VERY LARGE BUILDINGS, HUGE STATUES, GARDENS ETC.

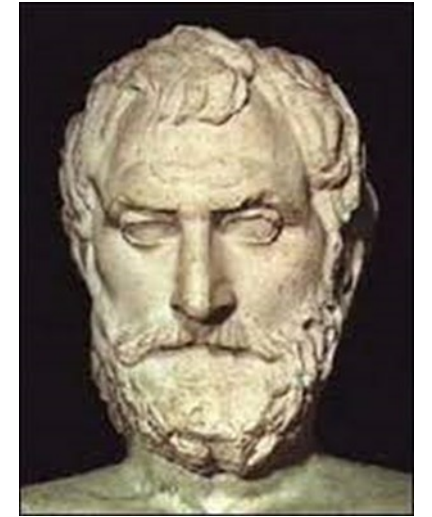


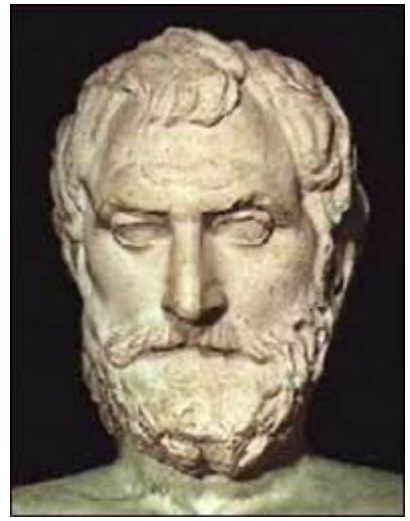
EGYPT WAS AN EMPIRE. GREECE HAD ONLY CITY STATES. IF ECONOMY IS BIG THEY CAN SPEND BIG AND BUILD MONUMENTS.

ALEXANDRIA



LIGHT HOUSE AT ALEXANDRIA





THALES LEARNT EGYPTIAN LANGUAGE.

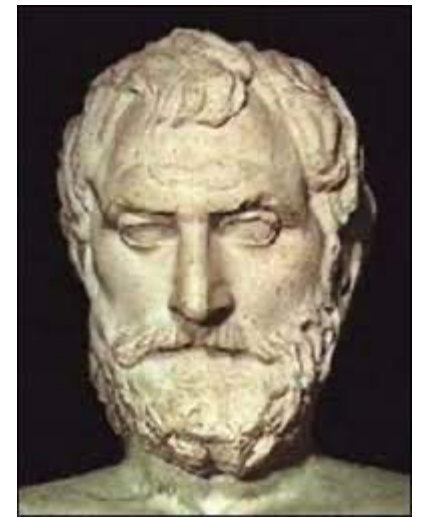
HE LEARNT THEIR LAND MEASUREMENT AND MATHEMATICS.

HE WAS ASTONISHED THAT THE LAND MATHEMATICS WAS DONE ON PAPER (PAPYRUS) .

HE COPIED THEM ON LINEN CLOTH .

HE THOUGHT -- HE CAN PRESERVE THEM BETTER WHILE GOING BACK ON LONG JOURNEY HOME.

THALES THEOREMS



- They say that Thales was the first to demonstrate that the circle is bisected by the diameter,

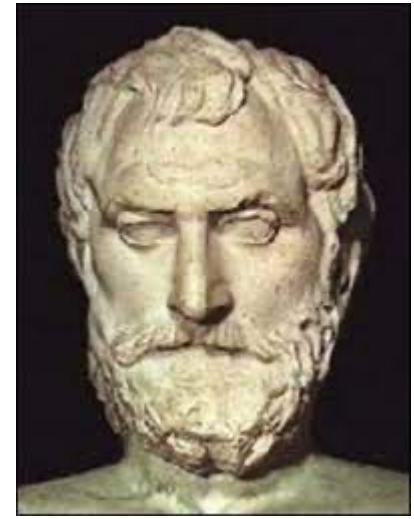
HOW HE GOT THE IDEA

- [Thales] is said to have been the first to have known and to have enunciated that the angles at the base of any isosceles triangle are equal,
- BY FOLDING THE LINEN IN HALF ON WHICH DRAWING WAS WRITTEN

THALES THEOREMS

- The theorem, that when two straight lines cut one another, the vertical and opposite angles are equal, was first discovered, as by Thales,
- Pamphila says that, having learnt geometry from the Egyptians, he [Thales] was the first to inscribe in a circle a right-angled triangle, whereupon he sacrificed an ox.

HOW HE GOT THE IDEA



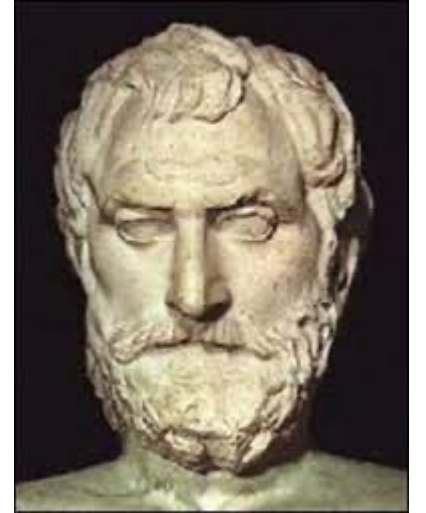
- BY FOLDING THE LINEN CLOTH IN HALF ON WHICH DRAWING WAS WRITTEN

**PEOPLE AT ALEXANDRIA TOLD THALES THAT
PYRAMIDS ARE EVEN BIGGER AND LARGER THAN
LIGHT HOUSE**

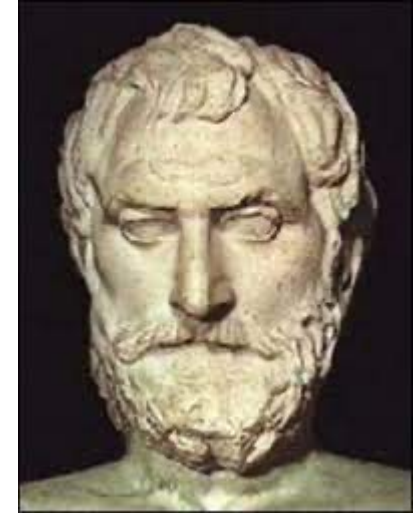
SO THALES WENT TO GIZA 1000 MILES UP THE NILE.

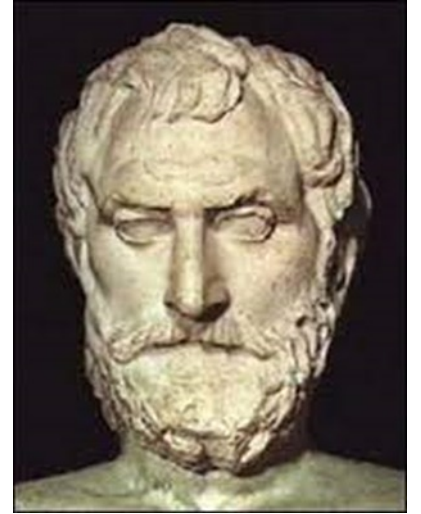
**WHEN HE SAW PYRAMID HE WANTED TO KNOW ITS
HEIGHT.**

**BUT IT WAS IN A DESERT .SHEPERDS SAID ALL
KNOWLEGEABLE PEOPLE WERE AT CAPITAL CITY.**



SO HE BEGAN TO THINK HOW TO MEASURE HEIGHT
OF THE PYRAMID

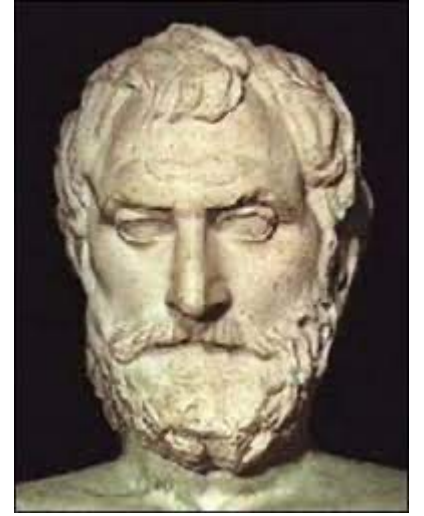




HE OBSERVED THAT AS SUN ROSE IN THE SKY THE SHEPEARDS MOVED THEIR SHEEP ALONG THE SHADE OF THE PYRAMID. THEY HID UNDER TREES AT NOON .

HE STUCK HIS WALKING STICK ON THE SAND AND
BEGAN TO OBSERVE MOVEMENT OF ITS
SHADOW.

**HE GOT THE IDEA TO MEASURE HEIGHT OF THE
PYRAMID**



HOW THALES MEASURED HEIGHT OF THE PYRAMID

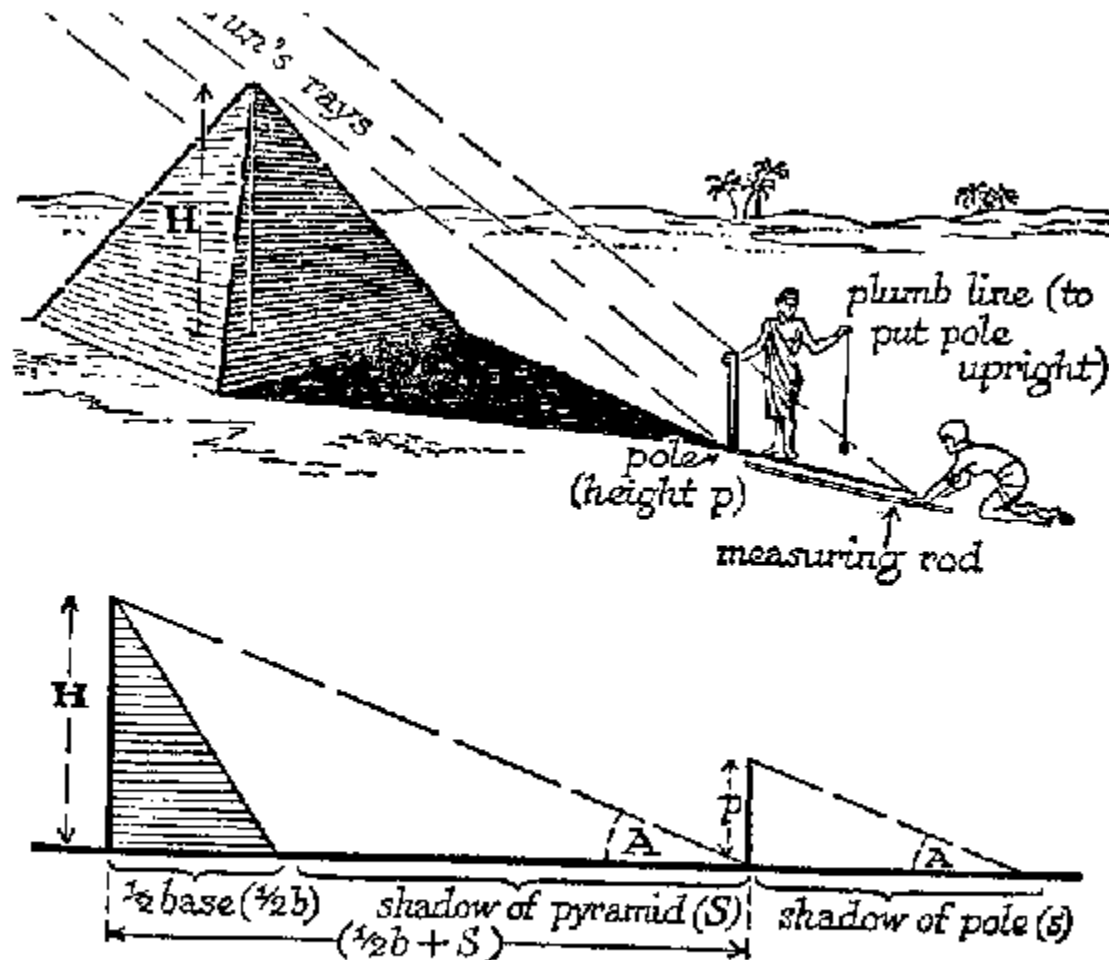
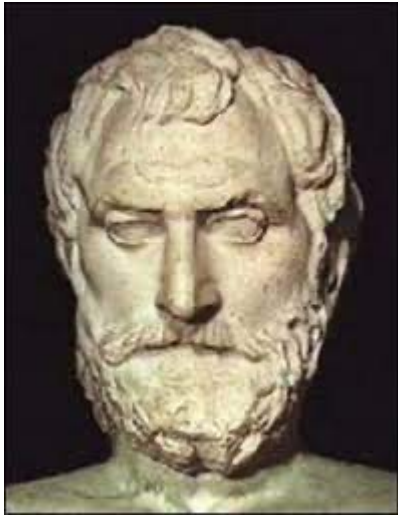
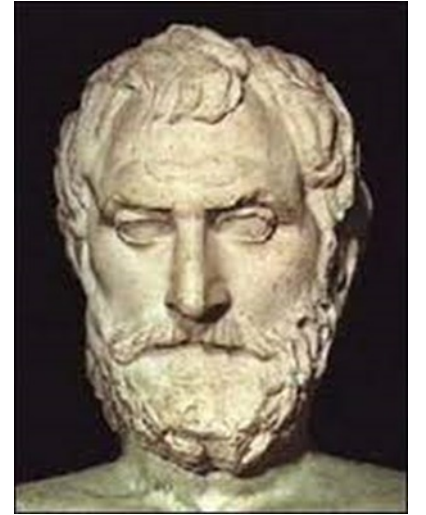


FIG. 49.—HOW THALES MEASURED THE HEIGHT OF THE GREAT PYRAMID
The angle A is the midday sun's inclination to the horizon, and is therefore the same for both triangles.

PEOPLE WERE ASTONISHED. THIS OLD MAN DID
NOT CLAIMB THE PYRAMID.
BUT BY MEASURING THE SHADOW PREDICTED ITS
HEIGHT.
THEY CALLED HIM WISEST MAN IN THE LAND.



THATS HOW THALES BECAME FIRST OF THE SEVEN
WISE SAGES OF THE GREECE.