

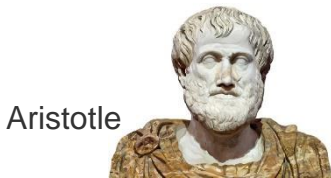
Math 4a. Class work 18.



1. Compare (replace ... with $>$, $<$, or $=$) if possible, if it is known that a and b are positive numbers and x and y are negative numbers:

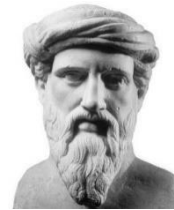
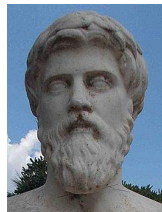
$0 \dots x$	$a \dots 0$	$-b \dots 0$	$0 \dots -x$
$a \dots x$	$y \dots b$	$-y \dots x$	$-a \dots b$
$ x \dots x$	$- y \dots y$	$a \dots a $	$ b \dots -b $
$ x \dots a$	$ x \dots -x$	$ x \dots - y $	$a \dots -b $

2. Ancient Greek scientist Aristotle was born in 384 and died in 322. Another Greek scientist Pythagoras was born in 570 and dies in year 495. Ancient Greek historian Plutarch was born in 46 and died in 120. How among them was born earlier? For how long did they live?



Aristotle

Plutarch



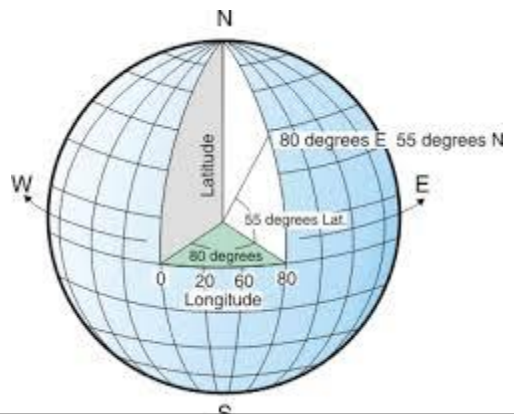
Pythagoras

Earth coordinate system:

A *geographic coordinate system* uses a three-dimensional spherical surface to determine locations on the earth.

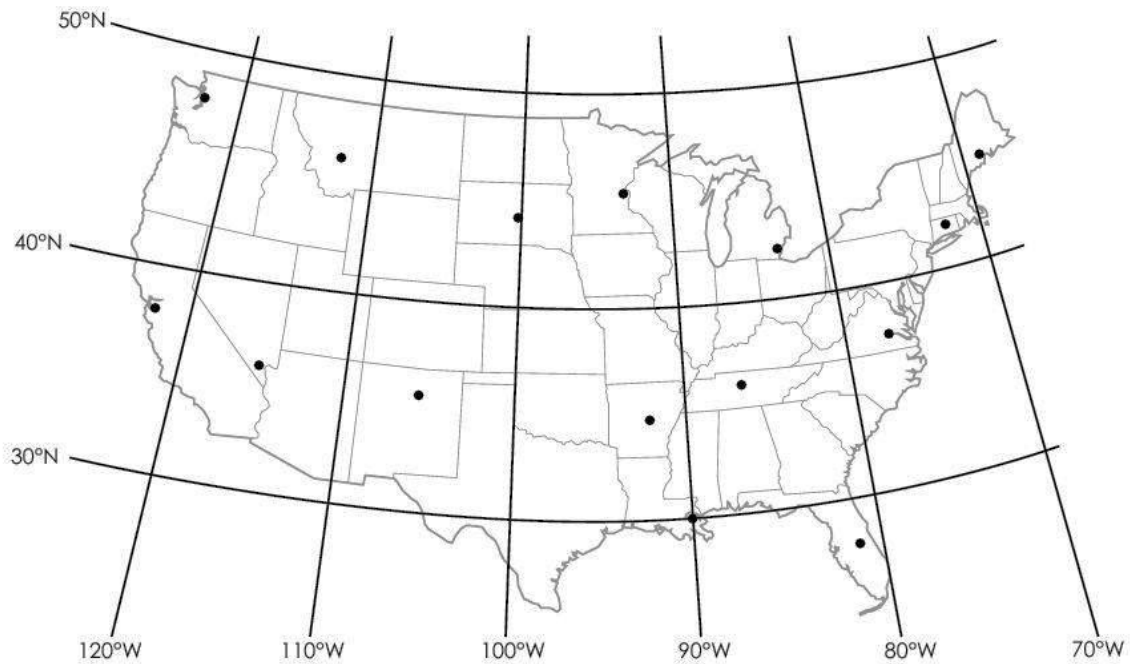
Any location on earth can be referenced by a point with longitude and latitude coordinates. The values for the points can have the following units of measurement:

- Decimal degrees
- Decimal minutes
- Decimal seconds



For example, the following figure shows a geographic coordinate system where a location is represented by the coordinates longitude 80 degree East and latitude 55 degree North

Latitude and Longitude



Using the coordinates listed below, write the name of the city next to its plotted latitude and longitude point on the map.

Detroit, Michigan: 42°N, 83°W

Richmond, Virginia: 37°N, 77°W

New Orleans, Louisiana: 30°N, 90°W

Pierre, South Dakota: 44°N, 100°W

Orlando, Florida: 28°N, 81°W

Santa Fe, New Mexico: 35°N, 106°W

Hartford, Connecticut: 42°N, 72°W

Helena, Montana: 46°N, 112°W

Las Vegas, Nevada: 36°N, 115°W

Little Rock, Arkansas: 35°N, 92°W

Seattle, Washington: 47°N, 122°W

San Francisco, California: 38°N, 122°W

Augusta, Maine: 44°N, 69°W

Nashville, Tennessee: 36°N, 87°W

Minneapolis, Minnesota: 45°N, 93°W

Two bicyclists start 100 miles apart, and head towards each other, each one going 10 mph. At the same instant, a fly leaves the first bike and flies at 20 mph to the second. When it gets there, it immediately turns around and heads back to the first. Then it repeats, going back and forth between the two bikers. By the time they reach each other, how far will the fly have travelled?

