

Student name: _____

The two nearest planets to the Earth are

Mercury and Venus.

Mars and Jupiter.

Venus and Mars.

Pluto and Mars.

The total number of planets orbiting the sun is

6.

7.

8.

10.

Venus' radius as compared to the Earth's radius is

.53.

.67.

.10.

.95.

The sun's mass as compared to Earth is

300,000 times smaller.

300,000 times larger.

100 times smaller.

100 times larger.

In astronomy, the scientific method involves proposing ideas about only those things we can directly observe and measure.

true

false

The Astronomical Unit is about 150 million km.

true

false

The system of several hundred billion stars in which our sun lives is called

a stellar population.

a galactic cluster.

the Milky Way galaxy.

the solar system.

Within the Local Group, our galactic cluster, the Milky Way may collide with _____ in about 5 billion years.

M52—Whirlpool Galaxy

M31—Andromeda Galaxy

M101—Pinwheel Galaxy

the edge of the universe

Superclusters are

collections of many clusters of galaxies.

collections of many star clusters.

our local group.

the whole universe.

The changes that a star goes through during its life are called

star clusters.

stellar evolution.

galaxies.

stellar mass.

The Local Group represents a cluster of the closest galaxies to our Milky Way.

true

false

A light year is about 10 trillion km (6 trillion miles).

true

false

If you express .0000003 in scientific notation, you would show it as

3×10^{-6} .

3×10^{-7} .

3×10^{-8} .

3×10^{-5} .

Density is

mass per unit length.

mass per unit volume.

mass per unit area.

mass per unit force.

The MKS system stands for

many kilometers seconds.

meter kilometers seconds.

meter kilograms seconds.

centimeters grams seconds.

632,000 is the same as

632×10^5 .

6.32×10^6 .

6.32×10^5 .

632×10^6 .

A mile and kilometer are about the same distance.

true

false

The distance from the sun to the center of the Milky Way is approximately

4.2 ly.

25,000 ly.

100,000 ly.

4,000,000 ly.

An idea, expressed with clear true/false parameters, that seeks to explain scientific observations is called a

hypothesis.

theory.

law.

principle.

The smallest particle that still retains the properties of an element is called a(n)

neutron.

electron.

proton.

atom.

Light is made of elementary particles called

protons.

electrons.

photons.

charges.

A schematic representation of a real system that illustrates its most essential relationships and interactions is a

hypothesis.

theory.

law.

model.

The strongest fundamental force is gravity.

true

false

Once a hypothesis has been rigorously tested and reliably verified it may become a theory.

true

false

A(n)_____ is a grouping of stars in the sky that is officially recognized by the International Astronomical Union.

asterism

celestial grouping

constellation

celestial area

Declination on the celestial sphere is similar to_____ on the Earth:

latitude

longitude

altitude

direction

Right ascension on the celestial sphere has this role on the Earth.

latitude

longitude

altitude

direction

These stars always appear above the horizon.

equatorial

circumpolar

celestial

stars at the zenith

We measure N-S coordinates on the Earth by longitude.

true

false

The north-south line that runs through the Royal Observatory is the mark of 180 longitude.

true

false

Zodiac means

hall of animals.

circle of astrology.

place of animals.

circle of animals.

The Arctic circle begins at _____ north latitude.

23.5 deg

66.5 deg

41 deg

0 deg

Precession takes about _____ to complete one full cycle.

26,000 years

2600 years

13,000 years

20,000 years

The Earth orbits around the Sun. Another word for **orbits** is

precesses.

spins.

rotates.

revolves.

When a planet spins on its axis this is called rotation.

true

false

The motion of a body around another body is called revolution.

true

false

This divides the east and west halves of the sky.

ecliptic

meridian

zenith

nadir

The majority of Earth's 24 major time zones are centered every_____ degrees of longitude.

10

12

24

15

The nuisance of having different times across the globe can be solved by using

international time.

standard time.

daylight saving time.

universal time.

A solar day is

the time it takes from one sunrise on one day, to the sunrise on the following day.

the time it takes the Sun to go from its highest point in the sky one day, to its highest point in the sky on the following day.

the time it takes from one sunset on one day, to the sunset on the next day.

the time it takes from sunrise to sunset.

The leap second is added to keep the clocks in agreement with the sun and stars.

true

false

A.M. stands for Ante Meridian.

true

false

Lunar eclipses can only occur when the moon is in the _____ position.

new

gibbous

full

crescent

The new usage for blue moon means

a rare event.

two full moons in same month.

two new moons in same month.

two eclipses in a month.

When we say the moon is waxing, the illuminated part of the moon that we see is said to be growing.

shrinking.

eclipsing.

at full phase.

When the Moon is in a crescent phase it is

closer to the Sun than the Earth.

farther from the Sun than the Earth.

the same distance from the Sun as the Earth.

The lunar phase cycle takes about 29.5 days to complete.

true

false

A penumbral eclipse is considered a partial lunar eclipse.

true

false

The day Thursday comes from this god of ancient times.

Wooden

Thor

Tiw

Mars

With respect to time, the abbreviation CE is beginning to replace what previous abbreviation?

AD

CBE

BC

ADC

Today, for accuracy, we use this calendar.

Julian

Gregorian

Leap

Augustus

Leap years are necessary because the year is a little longer than 365 days. However, the extra day every four years is too much because

the year is exactly 365 days.

the year is exactly 365 and 1/4 days.

the year is a little longer than 365 and 1/4 days.

the year is a little shorter than 365 and 1/4 days.

The Julian calendar failed to use the leap year.

true

false

The week is seven days due to the number of stars in the Big Dipper.

true

false

This Greek estimated the size and distance to moon and sun.

Aristotle

Pythagoras

Plato

Aristarchus

One convincing reason for the belief in the geocentric model was the lack of
planetary motion.

parallax.

eclipses.

lunar phases.

This Greek measured the size of the Earth very accurately with sticks and shadows.

Aristotle

Eratosthenes

Pythagoras

Plato

Eratosthenes' method for measuring the size of the Earth is based on the assumption that rays of sunlight are parallel.

lengths of shadows, for same sized objects, are the same everywhere.

the Earth is flat.

the Moon and Sun are always at a fixed angle of separation.

Stellar parallax was eventually observed by the ancient Greeks.

true

false

How big an object looks is called its angular size.

true

false

The_____ puts the Earth at a stationary point in the center of the universe.

heliocentric model

solar model

geocentric model

Aristarchus model

This person began the modern reintroduction of the sun-centered model.

Copernicus

Kepler

Galileo

Newton

This is a small circle on the larger circle used to describe orbits in the geocentric model.

epicycle

deferent

zigzag

eccentric

A planet is in opposition when it is directly opposite the sun in the sky.

true

false

Using his model, Copernicus could determine the Earth's distance from the sun.

true

false

Eccentricity is used to describe the _____ of an elliptical orbit.

semi-major axis

degree of elongation

time

area

Kepler's third law is

the law of ellipses.

the law of equal areas in equal times.

the relationship between period and orbital size: $P^2 = A^3$.

the law of gravity.

Galileo observed which of the following?

Jupiter's four largest moons

Saturn appeared to be misshapen

Craters on the moon

All of these choices are correct.

According to Kepler's second law, a planet

has an elliptical orbit.

travels fastest when it is closest to the Sun.

travels fastest when it is farthest from the Sun.

has a period whose square is the same as the cube of its distance.

Galileo proved the planets moved in ellipses.

true

false

Brahe collected data in order to prove the Copernican heliocentric model was correct.

true

false

This planet is usually referred to as the evening or morning star.

Venus

Jupiter

Mars

Saturn

Your thumb, held at arm's length, measures about _____ across.

5 degrees

2 degrees

10 degrees

$\frac{1}{2}$ degree

With respect to the stars, over several nights the usual motion of the moon and planets across the night sky is observed to be

west to east.

west to east along the celestial equator.

east to west.

east to west along the celestial equator.

The angle measured eastward from true North to a point on the horizon is

zenith.

altitude.

meridian.

azimuth.

A star's azimuth is its angle above the horizon.

true

false

The equation of time gives the correction to the sundial time.

true

false

A total solar eclipse is visible

only for observers in the moon's umbra.

only during a full moon.

only for observers on the equator.

only once per month.

Earth serves as a model for understanding other planets.

true

false

The astronomical unit is an appropriate measure for distances between galaxies.

true

false

The term "plutoid" refers to

any object smaller than Earth's moon.
any dwarf planet orbiting beyond Neptune.
any solar system debris located in the Kuiper belt.
the planet Pluto and its orbiting satellites collectively.

When comparing masses of the planets in our solar system, the planets with the smallest masses are located

in the inner solar system.
just outside the asteroid belt.
within the Kuiper Belt.
scattered between both the inner and outer solar system.

If we were to compare the age of the Sun to the life cycle of a human, the Sun would be considered

an infant.
a young child.
a middle-aged adult.
a senior citizen.

In astronomy, the scientific method involves proposing ideas about only those things we can directly observe and measure.

true
false

A scientific law
can make accurate predictions even when new ideas overtake it.

is based on widely tested hypotheses that have not been disproven.

can be proven beyond a shadow of a doubt.

can make accurate predictions even when new ideas overtake it and is based on widely tested hypotheses that have not been disproven.

The idea that some properties, scientific principles and concepts operate in the same fashion throughout the universe is called the hypothesis of

universality.

gravity.

modeling.

electromagnetism.

Time zones vary an average of one hour between consecutive zones regardless of their actual longitudinal time.

true

false

If you travel west from San Francisco, CA to Seoul, S. Korea, you will _____ a day when you cross the international date line, located at _____ degrees longitude.

subtract; 180

add; 0

add; 180

subtract; 0

The practice of switching to daylight savings time in the summer is now mainly practiced by Australia and North America.

North America and Europe.

North and South America.

Asia and South America.

The angular size or small-angle formula relates angular size to distance and parallax.

linear (actual) size and distance.

moon's diameter and distance.

apparent size.

A celestial object has an angular diameter of 0.7° . The object is estimated to be around 3,000,000,000 billion km away. What is its actual (linear) diameter?

$5.83 \times 10^6 \text{ km}$

$1.83 \times 10^7 \text{ km}$

$2.10 \times 10^9 \text{ km}$

$3.66 \times 10^7 \text{ km}$

Answer Key

Test name: CH1 Pathways to Astronomy E6

C

C

D

B

FALSE

TRUE

C

B

A

B

TRUE

TRUE

B

B

C

C

FALSE

B

A

D

C

D

FALSE

TRUE

C

A

B

B

FALSE

FALSE

D

B

A

D

TRUE

TRUE

B

D

D

B

TRUE

TRUE

C

B

A

A

TRUE

TRUE

B

A

B

D

FALSE

FALSE

D

B

B

A

FALSE

TRUE

C

A

A

TRUE

FALSE

B

C

D

B

FALSE

FALSE

A

B

A

D

FALSE

TRUE

A

TRUE

FALSE

B

A

C

FALSE

D

A

TRUE

C

B

B

D