

HW 1

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Started: January 27, 2006 9:24 AM 10 Questions

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1. (10 point(s))

What is the difference between a theory and a law of physics?



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2. (10 point(s))

Astronomers sometimes announce that they have discovered a new solar system beyond our own, or a new galaxy beyond our own. Which choice correctly describes the terms "solar system" and "galaxy"?

- 1. A solar system is a large assemblage of stars similar to the Sun, whereas a galaxy is much larger and consists of all different types of stars.
- 2. A galaxy consists of planets and other objects orbiting around a single star, whereas a solar system is a system consisting of an immense number of stars (i.e., suns).
- 3. A solar system consists of planets and other objects orbiting around a star, whereas a galaxy is a system consisting of an immense number of stars.
- 4. A solar system consists of an immense number of stars (i.e., suns), and a galaxy is a cluster of many such systems.

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3. (10 point(s))

One arcsecond is equal to

- 1. 1/3600 of a full circle.
- 2. 1/60 of a full circle.
- 3. 1/3600 degree.
- 4. 1/60 degree

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4. (10 point(s))

The average distance from the Earth to the Sun, 149,600,000 km can be written in shorthand notation as

- 1. 1.496×10^6 km.
- 2. 1.496×10^7 km.
- 3. 1.496×10^9 km.
- 4. 1.496×10^8 km.

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5. (10 point(s))

Give an example of how astronomical observations are different than those in other sciences.

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6. (10 point(s))

Diurnal motion of objects in the sky is caused by the

- 1. precession of the Earth's axis.
- 2. revolution of Earth around the Sun.
- 3. motion of the Moon across the sky.
- 4. rotation of the Earth on its axis.

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7. (10 point(s))

In the following image, estimate how long the camera exposed the film to get the long arc?
(Image credit http://antwrp.gsfc.nasa.gov/cgi-bin/data/images/0205/planets1_german.jpg)



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8. (10 point(s))

Sirius is the brightest star in the night sky. You watch it set behind the western horizon about 2 AM in the middle of February. About what time will it set in the middle of March?

- 1. 10 PM
- 2. midnight
- 3. 2 AM
- 4. 4 AM

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9. (10 point(s))

In the northern hemisphere, summertime occurs when

- 1. sunlight is less direct on this hemisphere, spreading the heat out over a greater area, and the day is longer.
- 2. sunlight is more direct on this hemisphere and the night is longer.
- 3. the Earth's equator is parallel to the plane of its orbit.
- 4. sunlight is less direct on this hemisphere, spreading the heat out over a greater area, and the night is longer.
- 5. sunlight is more direct on this hemisphere and the day is longer.
- 6. the Earth is closest to the Sun in its elliptical orbit.

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10. (10 point(s))

You are planning on sailing around the world with your friend Dumm without any modern navigation equipment. He says, "I can't get lost because no matter where I am on Earth. I can always find North by using the Big Dipper to find the North Star." What do you say?

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