HW5

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1. Largest Planet

(10 point(s))

Which is the largest planet in our solar system?

- 1. Saturn
- 2. Jupiter
- 3. Earth
- 4. Saturn
- 5. Uranus

Save Answer

2. Our Solar System

(10 point(s))

Which of the following characteristics is not typical of our planetary system?

- 1. The orbits of most planets are almost circular.
- 2. Most planets have about the same physical size.
- 3. The spin axes of most planets are aligned to within 30° to the perpendicular to the orbital plane.
- 4. Most planets orbit the Sun in the same direction.

Save Answer

3. Io

(10 point(s))

Io looks the most like

- 1. a pizza.
- 2. a volkswagen bug

- 3. a vegetarian spaghetti meatball.
- 4. a potato.
- 5. Mercury.

Save Answer

4. Xena

(15 point(s))

Argue for or against the newly discovered object called 2003 UB313 (sometimes called Xena) being called the 10th planet. Either opinion is okay as long as it is supported with some facts.

Save Answer

5. Static?

(15 point(s))

You missed lecture on Tuesday. You ask your close friend Dumm what you missed. He tells you that the Sun has a water-static non-moving thing. And that when the Sun uses up its coal, it will stop shining.

You read ahead, so you know that the Sun is in hydrostatic equlibrium by fusion. Explain this carefully to Dumm.

Save Answer

6. Solar Power

(10 point(s))

What process provides the power for the Sun?

- 1. fusion of helium into carbon
- 2. fission of uranium to form lead
- 3. emission of neutrinos
- 4. fusion of hydrogen into helium

5. little hamsters in a LOT of little hamster wheels

Save Answer

7. Fusing

(10 point(s))

Thermonuclear fusion reactions in the core of the Sun convert four hydrogen nuclei into one helium nucleus. The helium nucleus has

1. less mass than the four hydrogen nuclei, the lost mass becoming energy in an amount given by $E = mc^2$.

2. the same mass as the four hydrogen nuclei, because the mass of any product has to equal the mass of the sum of its parts by the law of conservation of matter.

3. an undetermined amount of mass that depends on the temperature at which the reaction occurs.

4. more mass than the four hydrogen nuclei, because energy is produced in the reaction, and this energy adds the extra mass, $m = E/c^2$.

Save Answer

8. We're all going to die!

(10 point(s))

How much longer can the Sun continue to generate energy by nuclear reactions in its core?

1. about 500,000 years

2. about 50 billion years

3. about 5 billion years

4. about 5 million years

Save Answer

9. Para-who?

(10 point(s))

Parallax is the

1. distance to an object, measured in parsecs

- 2. angle subtended by an object, as seen by us.
- 3. apparent shift in position of a nearby object on the sky as we move.
- 4. shift in position of an object on the sky as it moves.

Save Answer

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