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Name (Last, first)

# Astronomy 110 Homework 5: Earth and Dearth

Write the answers to the questions on this sheet.
Homework due by 11.20 am February 25th 2005

Suppose our Solar System had an extra planet called "Dearth", which was like Earth in *almost* every way, such as geography, size, rotation, and orbit around the Sun (unless otherwise stated). Each question on this homework describes a single difference that might exist between Earth and Dearth. Describe one or two obvious changes you would notice between living on Earth and living on Dearth in each case. Answer each question separately: do not combine the alterations from different questions together.

*Ignore the possibility that Dearth might be visible from Earth and vice versa*

*You may give more than one answer to each question. Each good answer gets one point. Maximum score per question is 2 points. Maximum score for the homework is 10 points total.*

1) Dearth rotates on its axis twice as fast as Earth does.

2) Dearth's orbit round the Sun is a circle of radius 2 Astronomical Units

3) Dearth's rotation axis is tilted by 45° instead of 23½°

**[OVER**

4) Dearth’s mass is double that of Earth, but its radius is the same.

5) Dearth's radius is double that of Earth's, but its mass is the same.

6) Dearth's Moon is twice as far away from Dearth as the Earth's moon is from the Earth.

7) Dearth’s Moon is double the diameter of Earth’s Moon, but its density is the same.