Preparation for Test 1

• Do the practice test (Test 1 from Fall 2008)
  – Link on syllabus on angel
• Review the homework. For each question,
  – What is the main idea?
  – What are less important ideas? How are they related to the big ideas?
  – What are details?
• For each class,
  – What are the one or two big ideas? You must understand these.
  – What are less important ideas? How are they related to the big ideas?
  – What are details?

First test

• See practice test (link is on the syllabus)
  – A few questions with verbal, numeric, or graphical answers.
  – No multiple-choice questions.
• Material covered on Wed, 23rd will be on the test.
• First test counts only 5% of course grade.
• Answers for Practice Test will be posted tonight.
• You may bring one sheet of notes to use for Test 1.
  – 8½ ×11” Write on front & back.
• Special office hour
  – Mon, 12:00-1:00 in 3260
• Homework 3 must be handed by noon, Tues, 29th.
  – Answers will be posted afterwards. See link on syllabus.
– What are the one or two big ideas? You must understand these.
– What are less important ideas?
  • Examples of LII
    – Definition
    – Drawing
  • How are they related to the big ideas?
– What are details?

Kepler’s Laws

• Hwk1: max is 28
  – If you want a question regraded, write a note on the front & give me the paper.
• Figure added to Homework 2
  – See link on syllabus
• Read pages in Galileo’s Starry Messenger for Mon
  – See link on syllabus
  – How & when did Galileo know that he had discovered moons of Jupiter?
• The discovery of the laws of motion, the first science.
  – De Revolutionibus Orbium Coelestium, Copernicus, 1543
  – Astronomia Nova, Kepler, 1609
  – Philosophiae Naturalis Principia Mathematica, Newton, 1687
• How Kepler figured out the path of Mars from Tyco’s observations.
• Kepler’s three laws.

<table>
<thead>
<tr>
<th>Event</th>
<th>Year</th>
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<tbody>
<tr>
<td>Copernicus</td>
<td>1473–1543</td>
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<tr>
<td>Columbus sails</td>
<td>1492</td>
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<tr>
<td>Tycho Brahe</td>
<td>1546–1601</td>
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<td>Shakespeare</td>
<td>1564–1616</td>
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<tr>
<td>Johannes Kepler</td>
<td>1571–1630</td>
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<tr>
<td>Jamestown</td>
<td>1607</td>
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<td>King James Bible</td>
<td>1611</td>
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<td>Harvard College</td>
<td>1636</td>
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<tr>
<td>Isaac Newton</td>
<td>1642–1727</td>
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Determining one point on Mars’ orbit (from 9/18)

- Observations
  - On 21 March 1978, the right ascension of Mars is 7hr 46min (116.5° from the sun on the vernal equinox).
  - On 1 Jan 1980, Mars is at 11hr 06min (166.5°).
  - On 15 Jan 1980, Mars is at 11hr 12min (168.0°).
  - On 6 February 1980 (one Martian year later), Mars is at 11hr 02min (165.5°).
  - On 1 Mar 1980, Mars is at 10hr 30min (157.5°).

1. Which point is on Mars’ orbit?
   B

- What are the one or two big ideas? You must understand these.
- What are less important ideas?
  - Examples of LII
    - Definition
    - Drawing
  - How are they related to the big ideas?
- What are details?
- Identify a “big idea,” a less important idea, an unimportant detail.
  1. #I is __.
     A. BI.
     B. LII.
     C. UD.
  2. Which is the biggest idea?
• Ideas & details
  I. The particular dates
  II. The idea of right ascension
  III. That two observation are one Martian year apart.
  IV. The position of the sun on 3/21.
  V. Finding a point on Mars’ orbit

– What are the one or two big ideas? You must understand these.
– What are less important ideas?
  • Examples of LII
    – Definition
    – Drawing
  • How are they related to the big ideas?
– What are details?

• Identify a “big idea,” a less important idea, an unimportant detail.

1. #I is __. C
   A. BI.
   B. LII.
   C. UD.

2. Which is the biggest idea? u