Due Friday, September 29 in class

Instructions

This handout is just a worksheet: we will only accept homework on the bubble sheets provided. Please fill in the following info on the bubble sheet (**#2 pencil only**, no pens!):

1. Your full name, **last name** first, first name last, and remember to bubble in the letters.

2. Bubble in the 5-digit homework code, **10601,** on the form under "**Identification Number**" in columns **A-E** (lower left-hand corner of the form), as shown below:

Do **not** enter your Student ID, SS#, or any other info into this area.

3. Bubble in your answers under questions 1-5 in the fields provided on the form.

No late homework will be accepted.

This homework assignment consists of the 5 questions below. Each question has equal weight.

1. How would you express the numbers 0.0017 and 542.1 using scientific notation?

   a) 1.7×10^{3} ; 5.421×10^{-2}
   b) 1.7×10^{3} ; 5.421×10^{2}
   c) 1.7×10^{-3} ; 5.421×10^{2}
   d) 1.7×10^{-3} ; 5.421×10^{-2}

2. Two Martian astronomers, Marvin and Melvin, are located due north and south of each other on the day of the Martian Equinox. Marvin is on the Martian equator and sees no shadows cast at Noon. Melvin is 355 km north of the Equator and sees a 6-degree shadow at Noon. What is the circumference of Mars in kilometers?

   a) 21300 km
   b) 17750 km
   c) 28800 km

Hint: this is essentially Eratosthenes' method for measuring the circumference of the Earth translated to Mars. Drawing yourself a picture like the one shown in the class notes will help.

3. An Apollo astronaut dressed in his space suit had a mass of 162kg, or about 360 pounds on Earth. The Moon's gravity is 1/6-th that of Earth's. While on the Moon's surface, the astronaut's mass was _____ and his weight was _____.

   a) 27 kg, 60 pounds
   b) 162 kg, 60 pounds
   c) 27 kg, 360 pounds
   d) 162 kg, 360 pounds

4. 10,000 Million Years can also be written as

   a) 10 Terayears
   b) 10 Trillion years
   c) 100 Gigayears
   d) 100 Megayears
   e) 10 Gigayear

5. Aliens abduct you and dump you on a small island somewhere on Earth. After a few days, you notice that the angle of the Sun's path at sunrise and sunset is always an exact right angle (90-degrees) relative to the Horizon. Where are you?

   a) an island on the Equator.
   b) an island at 45-degrees South latitude.
   c) an island above the Arctic circle.
   d) an island at 45-degrees North latitude.