Homework #2 Geology 1020 Spring 2009 Name:__KEY_____

Due Thursday January 29 at 12:30 pm.

1. **A**. The Earth is about 4.56 billion years old. Write out this number in both long hand notation (with zeros) as well as scientific notation (powers of 10).

4,560,000,000 years. 4.56 x 10^9 years.

B. Historical records, in other words, history **written down by people**, represents approximately what **<u>percentage</u>** of geologic time?

Provide your answer with the percent sign (%) AND using scientific notation; hint: historical records begin about 6000 years ago)? *Please show your work below.*

In order to get a percentage of something like this, simply divide.

6000 years divided by 4,560,000,000 years is = 1.3158 x 10^{-6}

Take this number and multiply it by 100 (that's what PERCENT means!)

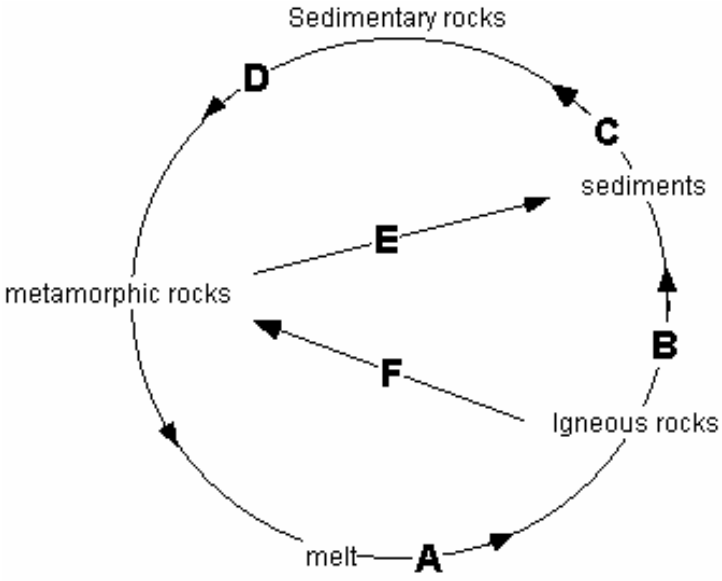
1.3158 x 10^{-6} X 100 = 1.3158 x 10^{-4} %, or in other words, 0.000132 %

2. An undeformed sedimentary layer is _____ than the layer above and _____ than the layer below.

A. younger……..older
B. older……..younger
C. younger……..younger
D. older……..older
E. the same age……infinitely older

3. On the Rock Cycle diagram at right, **fill in the table of factors responsible for the different paths in the diagram**:

*(For example, path **B** can be described as weathering, denudation, transport and (sedimentation).*



A. crystallization, cooling, solidification…
B. **weathering, denudation, erosion, transportation, sedimentation, *etc.***
C. transport, deposition, lithification…
E. weathering, transportation, erosion…
F. recrystallization through heat & pressure + chemical changes

4. What is the **difference** between an ATOM, an ELEMENT and an ISOTOPE?

Atom **Basic constituent of matter. Contains a nucleus with at least a proton, but frequently a neutron, surrounded by a cloud of electrons.**

Element **A pure substance defined by the number of protons in the nucleus of the atoms contained in that substance.**

Isotope **A variety of an element that contains variable numbers of neutrons. Isotopes of an element are chemically identical to other isotopes of the same element except for difference in mass.**