



## Welcome to AP Environmental Science! (APES)

I am glad you are taking the class this year!

Here is a review assignment to get you in the right frame of mind for the new school year. Please bring your completed work with you on the first day of class. There are three things I want you to remember, for these assignments and all year long:

1. **DO YOUR OWN WORK**—no copying, cheating, or taking information directly from sources. Sometimes students don't realize how obvious it is when they've copied, especially when your teacher is reading the same assignment over and over. Maintain your academic integrity and **USE YOUR OWN WORDS!**
2. **DO YOUR WORK IN A TIMELY MANNER.** We will move quickly through many topics, and it is important that your work is up to date so that you understand! While I sometimes take work late (grudgingly ☺) there will be deadlines after which no work is accepted.
3. **NEATNESS COUNTS!** While we aren't always doing labeling and coloring, we do a lot of writing and you will sometimes have to draw and label diagrams, and create graphs. Neatness and precision in your work shows that you are concentrating and giving the time to an assignment that it deserves. Rushed, sloppy, or unintelligible work can sometimes indicate poor planning and time management, as well as a lack of attention to detail. Always do your best!

Since I do believe summer is a time for family, relaxing, and recharging, I have abbreviated our assignment a bit. It is not complex, but will take some time to label and code three maps and answer questions, so plan ahead. In some ways our world has gotten smaller, but it's still a pretty big place, and not everyone knows where everything is! I am hoping that this assignment will be a good review of Geography that lays the foundation for some case studies that we will learn about later in the year.

There is also a simple math section for review. In all science classes, it's important to know the metric system, unit conversions, and scientific notation. We are not permitted to use calculators on the APES exam, so I want you to get some practice with some basic math without calculators. While you don't need to be a math whiz to pass the class or the test, you will need to display basic competency.

Don't forget to check your Blackboard account to make sure it is operational, and that you can see our class APES 2018-2019. That probably won't happen until the end of August. We will use Blackboard a lot this year, so it is important that you check regularly once school starts. We will also use Google Classroom for some assignments, so we'll do a refresher on that when the school year starts. Anyone having trouble accessing their accounts, or for students that are new to the county, we will troubleshoot any problems when we return for school.

That's it! Enjoy your summer, and I look forward to seeing all of you on August 28, 2018!

~Mrs. LeGros

[dalegros@fcps.edu](mailto:dalegros@fcps.edu)

# World Geography for APES

## **Supplies Needed: Pens with black, red, and blue ink; colored pencils; internet access, maps, textbooks**

A good working knowledge of basic world geography is important. This year in APES, we will talk about many different things that have happened around the world. You will learn the location of some of these events, as well as refreshing your knowledge of political and physical features of the globe.

Follow the directions for labeling on each of the maps provided. Use appropriate colors and keys, as well as the abbreviations provided. Your important labeling will be done in black ink, blue ink, and red ink. Colors should be in colored pencil. Use the internet and any textbook resources you have to help you.

## **A. Identify and Label on the World Political Map:**

- Equator (red) and Prime Meridian (dark blue)
- North, South, East, and West quadrants (on edges)
- Seven Major Continents (blue ink): N America, S America, Africa, Asia, Europe, Oceania, Antarctica. Color all of the ocean light blue around the continents.
- The following countries (black ink): US, Japan, Mexico, India, China, Costa Rica, Saudi Arabia, Australia, the State of Alaska, Greenland, Iceland, Indonesia, Borneo, New Zealand, Dem Rep Congo, Tasmania, The Philippines, Madagascar'
- Places of Environmental Significance (red ink; use abbreviation):

<b>3MI</b> Three Mile Island, PA	<b>MIN</b> Minimata, Japan	<b>3GD</b> Three Gorges Dam, China
<b>BHO</b> Bhopal, India	<b>LAR</b> Larsen Ice Shelf	<b>GPGP</b> Great Pacific Garbage Patch
<b>CHR</b> Chernobyl, Ukraine	<b>ALB</b> Alberta, Canada	<b>GBR</b> Great Barrier Reef
<b>PWS</b> Prince William Sound	<b>YUC</b> Yucca Mountain, NV	<b>QNL</b> Queensland, Australia
<b>BEJ</b> Beijing, China	<b>AMZ</b> Amazon Rainforest, Brazil	<b>MED</b> Mediterranean Sea
<b>MUM</b> Mumbai, India	<b>DWH</b> Deep Water Horizon spill	<b>EVG</b> The Everglades
<b>FUK</b> Fukushima, Japan	<b>ANWR</b> Arctic Nat'l Wildlife Refuge	<b>GRG</b> Gorongosa Nat'l park

## **B. Identify and Label on the World Physical Map**

**Label the Equator (red) and Prime Meridian (dark blue). Continents and oceans have been labeled for you, but still know them!**

**RIVERS (Trace in BLUE and label):** Amazon, Nile, Yangtze, Ganges, Mississippi, Colorado

**LAKES & SEAS (Trace in BLUE and label):** Hudson Bay, Great Lakes, Chesapeake Bay, Bering Sea, Gulf of Mexico, Ogallala Aquifer (aka High Plains Aquifer), Persian Gulf, Aral Sea, Mediterranean Sea, Red Sea, Lake Victoria, Lake Baikal

**PARKS & MOUNTAINS (Trace in BROWN and label):** Appalachians, Rockies, Andes, Alps, Himalayas, Denali, San Andreas Fault, Grand Canyon, Yellowstone National Park, Yosemite National Park, Glacier National Park, the Mid-Atlantic Ridge, Gorongosa, Amazon Rainforest, ANWR, Everglades

**ISLANDS (Trace in PURPLE and label):** Madagascar, Haiti, Galapagos Islands, Hawaiian Islands, Borneo, Philippines, Japan, Midway Island, Great Barrier Reef

## **C. Color Code the World Climate Map**

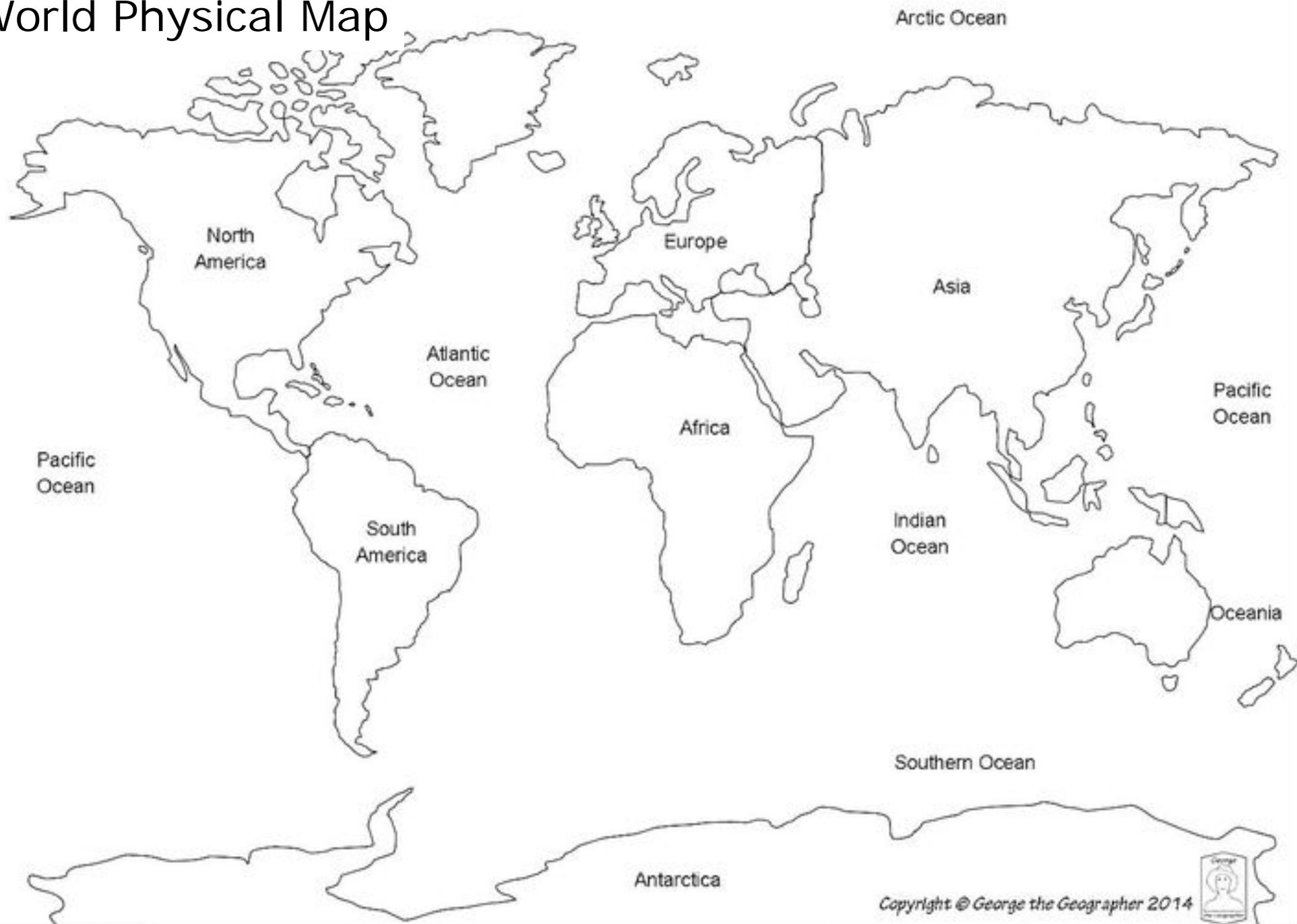
These major biomes will likely be found in more than one country. Use colored pencils to create a key and color the appropriate areas. Trace the boundaries and fill in the color. Be sure to include: Tropical Rainforests, Tropical Savannas, Tropical Deserts, Temperate Deciduous Forests, Temperate Prairies, Chaparral, Temperate Deserts, Coniferous Forests, and Tundra.

# World Political Map

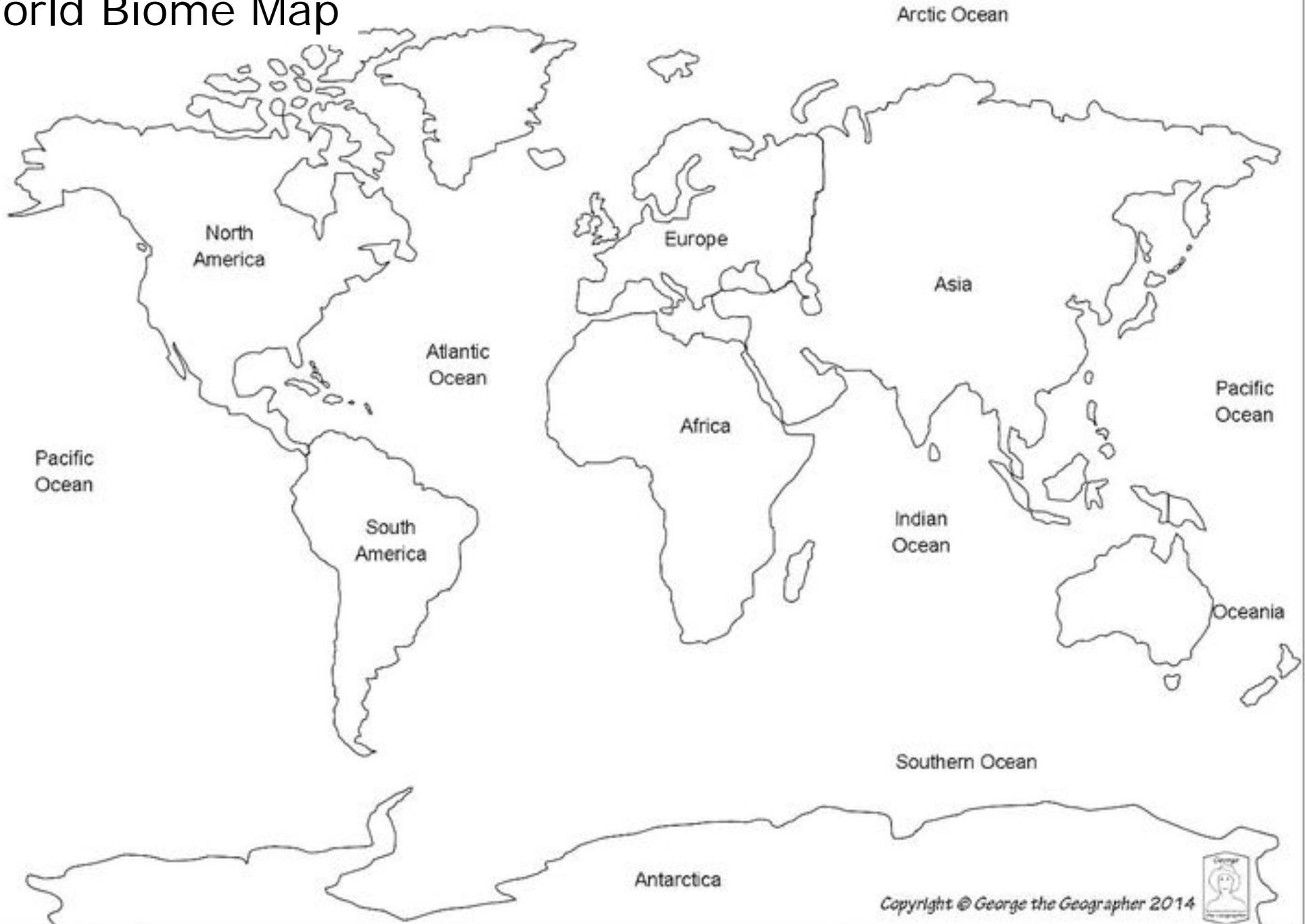
The World



# World Physical Map



# World Biome Map



# Analysis/ Review

Give a brief description of the environmental significance of the following locales. Sometimes that might be hard to determine, so your goal will be to find the most important fact(s). Why did we choose this place? What happened, what is unique, endangered, exploited, dangerous? You only need a couple of sentences, but be specific. Include your reference. Use this example:

Ex: What catastrophe devastated New Orleans and the Gulf Coast in 2005?

Hurricane Katrina was one of the deadliest hurricanes to hit the US, killing over 1800 people in August of 2005. It was a Category 4 hurricane, the sixth strongest recorded, and was nearly 75 miles wide. Katrina caused extensive flooding and threats to human health and sanitation. *www.livescience.com*

## 1. What happened....

- a. At Three Mile Island?
- b. In Bhopal India?
- c. In Chernobyl, Ukraine?
- d. In Fukushima, Japan?
- e. In Minamata, Japan?
- f. In Prince William Sound, Alaska?
- g. At the Deep Water Horizon oil rig in the Gulf of Mexico?

## 2. Why do we study...

- a. Antarctica?
- b. The Arctic?
- c. The Amazon Rainforest?
- d. The Arctic National Wildlife Refuge (ANWR)?
- e. Gorongosa National Park?
- f. The Everglades in Florida?
- g. The Great Pacific Garbage Patch?

## APES BASIC MATH SKILLS

Perform the following calculations WITHOUT a calculator! These problems have been set up with numbers that multiply and divide evenly to produce whole number answers, just like you would find on a typical APES exam.

1. 14,000 millimeters = ? meters \_\_\_\_\_

2. 6,544 liters = ? milliliters \_\_\_\_\_

3. 0.078 kilometers = ? meters \_\_\_\_\_

4. 17 grams = ? kilograms \_\_\_\_\_

5. Expand the following:

a.  $2.96 \times 10^7$

b.  $6.02 \times 10^{-3}$

c.  $6.67 \times 10^{-11}$

d.  $9.8 \times 10^5$

6. Put the following in scientific notation:

a. 0.025

b. 1150000

c. 0.0000550

d. 6070

7. Perform the following calculations without a calculator and write the answers in scientific notation:

a.  $(2.96 \times 10^7) + (1.0 \times 10^7)$  \_\_\_\_\_

b.  $(6.0 \times 10^6) \div (3.0 \times 10^4)$  \_\_\_\_\_

c.  $(2 \times 10^5) \times (3 \times 10^{10})$  \_\_\_\_\_

d.  $(8 \times 10^{12}) - (1.2 \times 10^{12})$  \_\_\_\_\_

8. Perform the following calculations without a calculator and write the answers in scientific notation:

a.  $(2.96 \times 10^7) + (1.0 \times 10^8)$  \_\_\_\_\_

b.  $(6.0 \times 10^6) \div (3.0 \times 10^{-4})$  \_\_\_\_\_

c.  $(2 \times 10^5) \times (3 \times 10^{-10})$  \_\_\_\_\_

d.  $(8 \times 10^{12}) - (1.2 \times 10^{11})$  \_\_\_\_\_

9. Perform the following calculations without a calculator (but show some work) and write the answers in scientific notation:

a.  $(2.96 \times 10^7) \div (3.7 \times 10^8)$  \_\_\_\_\_

b.  $(6.8 \times 10^6) \div (1.7 \times 10^{-4})$  \_\_\_\_\_

c.  $(2.1 \times 10^5) \times (3.1 \times 10^{10})$  \_\_\_\_\_

d.  $(9.6 \times 10^{12}) \div 160,000$  \_\_\_\_\_

*Show ALL work for these problems below. You may use a calculator for this section, but showing your work and the correct set up is important.*

10. What is 45% of 1800?

11. A gas engine is 6% efficient. What portion of a full 21 gallon tank of gas is wasted?

12. The Greenland Ice Sheet contains 2,850,000 cubic kilometers of ice. It is melting at a rate of .006% per year. How many cubic kilometers are lost each year?

13. In a small oak tree, the biomass of insects makes up 3000 kilograms. This is 4% of the total biomass of the tree. What is the total biomass of the tree?