**APES Review Worksheet #5**

1. Name the following:

 NO NO2

 NO2- NO3-

 NO2 N2O

 N2 NH3

 NH4+ HNO3

 NOx

1. In the box to the right, sketch a house and the surroundings of a house that is designed to make the greatest use of passive solar energy in the northern hemisphere. Include, inside the box, the location of both the winter and summer sun, and labels to indicate the compass direction that the house faces.



1. Use the information in the diagram on the left, to answer the following:
	1. The percent change in the per capita global production of protein from poultry between 1980 and 2000 was approximately \_\_\_\_\_\_\_\_.
	2. The percent change in the per capita global production of protein from farmed fish between 1980 and 2000 was approximately \_\_\_\_\_\_\_\_.
	3. The percent change in the per capita global production of protein from beef between 1961 and 2009 was approximately \_\_\_\_\_\_\_\_.
2. The founder of the Sierra Club was \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_.
3. Rachel Carson wrote the book \_\_\_\_\_\_\_\_ *Spring* to raise people’s awareness of the harmful effects of the pesticide \_\_\_\_\_\_\_\_.
4. The acronym ENSO refers to \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_, which occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_ ocean.
5. Place the following 8 events in chronological order: the oil spill of the **Exxon Valdez**; the meltdown of the reactor at **Chernobyl**; the discovery of contamination at **Love Canal**; The first **Earth Day**; the leak of methyl isocyanate in **Bhopal**; the drafting of the **Kyoto Protocol**; the ratification of the **Montreal Protocol**, passage of the **US Endangered Species Act**

 1) 5)

 2) 6)

 3) 7)

 4) 8)

1. Strengthen this weak statement: “Fossil fuel use releases carbon dioxide, which causes the greenhouse effect.”

1. The acronym BOD refers to \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_, which is:

1. Perform the following calculation. Show all of your work. If the grasses on a 100-hectare area of grassland grow at an average rate of 1 cm/day, the average volume of grass that is added to the grassland each day is \_\_\_\_\_\_\_\_\_\_\_\_ m3. If the density of the grasses that grow in the grassland averages 400 kg/m3, the net primary productivity is approximately \_\_\_\_\_\_\_\_\_\_\_\_\_ g/m2/day or \_\_\_\_\_\_\_\_\_\_\_\_\_ g/m2/year.

 Show work:

1. The acronym GMO refers to \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_, which are:

1. Strengthen this weak statement: “Protecting endangered species like the Giant Panda costs too much and should be stopped.”

1. Perform the following calculation. Show all of your work. A 40 m2 solar array is installed on a house where the average insolation is 6 kWh/m2/day if the average total electricity output of the array is 1.2 kWh/hr, the efficiency of the array is \_\_\_\_\_\_\_\_\_\_\_\_.

 Show work:



1. Consider the graph on the right and explain what can be inferred from the data it presents.

1. The first National Park was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ National Park.
2. Match the ten most populous urban areas in the world with its respective continent:

 Tokyo

 Seoul

* 1. Asia Mexico City
	2. N. America New York City
	3. S. America Mumbai
	4. Africa Jakarta
	5. Australia Sao Paulo
	6. Europe Delhi

 Osaka/Kobe

 Shanghai

1. List three sources of methane that are amplified by human activities.

 1)

 2)

 3)

1. The box to the right contains a crude depiction of a mountain, use it to sketch and label the essential atributes of a rain shadow. Include labels for the direction of the prevailing winds and nearest ocean.
2. NO2 is converted to N2 and O2 in a \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_, which also converts \_\_\_\_\_ to \_\_\_\_\_.
3. List causes of an urban heat island.

 1)

 2)

 3)

1. Identify the characteristic process associated with each of the following.

 Nitrification:

 Denitrification:

 Assimilation:

 Nitrogen Fixation:

 Ammonification:

1. CFC stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,which are:

1. Define the following…

 Watershed:

 Clean Air Act:

 Clean Water Act:

 Clean Drinking Water Act:

 El Niño:

 Baghouse filter

 Electrostatic precipitator:

 Dioxin: