

De Anza ES 79 Renewable and Alternative Energy Systems
Homework #1

Name _____

1. How is a renewable energy (RE) source different from a non-renewable energy source?
2. List three factors that determine the location of the sun in the sky.
3. How much energy (kWh) does a typical household use?
4. What should be done before sizing an new RE system?
5. What is the difference between power (kW) and energy (kWh)? Why is this important when sizing a PV system?
6. What does the term “Net Metering” refer to?
7. What is the optimum tilt angle for a solar panel in our area? What would the tilt angle be if you want to optimize your Summer or Winter energy production?
8. How do you determine if you need to have battery backup for a RE system?
9. List three factors that determine the output of a PV system.

10. What is an active solar system compared to a passive solar system?

11. What is a rough average minimum wind speed required to make a wind RE system cost effective?

12. What are three things that should be considered when locating a wind RE system?

13. What is a fuel cell? Name one benefit of using a fuel cell for stationary power production.

14. What energy source(s) typically power a stationary fuel cell?

15. What is one key advantage of using hydropower as a source of energy?

16. What is one key disadvantage?