Green Power Homework 1

1. The wind is blowing on a turbine 10 feet in diameter at a velocity of 12 mph. What is the power developed by the turbine?

2. It is desired to obtain 25 kW of AC out of a solar array at 120 VAC, pf = 1.
   The inverter has an efficiency of 85% and requires 50 VDC to operate.
   Solar cells are available that provide a voltage output of 0.5 V at 3 A.
   a. A How many solar cells are required with a 20% safety factor?
   b. Describe the connection diagram of the solar panel array. It is not necessary to draw it.
   c. What will be the approximate cost of the array?