

Wind Power Physics Problems

Use the [conversion applet](#) if necessary. It is recommended that you use a handheld calculator or computer desk accessory calculator when doing these problems.

1. If the height is 21 meters and the mass of the blades is 200 g, what is its potential energy?	A. 41kJ B. 6.03J C. 41.16J D. 52J
2. If a wind power plant were put on the planet Zircon where gravity has a constant value of 32.4 m/s^2 at a height of 25 meters, with a blade mass of 100 kg, what would be its potential energy?	A. 81kJ B. 32kJ C. 6.3J D. 428J
3. What is the kinetic energy for Question #2, if the average wind speed on the moon is 65 miles per hour?	A. 2541J B. 321J C. 65kJ D. 42.217kJ
4. What is the average wind speed if a tower's blades have a total mass of 0.8 kg and kinetic energy of 60 J?	A. 3.8 m/s B. 12m/s C. 41m / s D. 3m/s
5. What is the greatest mass that the blades of a wind tower can be if the average velocity of wind is 30 km per hour and it is 100% efficient and produces 400J?	A. 12.89kg B. 11.52kg C. 8.6g D. 4.03g
6. If a tornado has a velocity of 100 mph and goes through a wind farm, what is the kinetic energy of the blades of one wind tower if its mass is 90 kg?	A. 45kJ B. 90kJ C. 3.06J D. 97J
7. What time must energy be used if the energy used is 300 J and the power is 500W ?	A. 36 s B. 86 hrs C. 6.05 s D. 23 minutes
8. How much power is used when one appliance consumes 28J of energy over 30 seconds?	A. 0.09 W B. 3.08 kW C. 64kW D. 0.9W
9. If the power consumed is 200 W, and the time is 31 days, how much energy was used up?	A. 6.38kJ B. 356J C. 6.2kJ D. 406J
10. A wind power home system must meet the demand of 300 W of power for each day. What is the amount of energy that must be generated?	A. 300J B. 2500kJ C. 6.03J D. 98kJ