Power

Read from Lesson 1 of the Work, Energy and Power chapter at The Physics Classroom:
http://www.physicsclassroom.com/Class/energy/u5l1e.html

MOP Connection: Work and Energy: sublevel 2

Review:
1. A force acting upon an object to cause a displacement is known as _____.
   a. energy  b. potential  c. kinetic  d. work

2. Two acceptable units for work are ________. Choose two.
   a. joule  b. newton  c. watt  d. newton•meter

Power as a Rate Quantity:
3. Power is defined as the _______ is done.
   a. amount of work which  b. direction at which work
   c. angle at which work  d. the rate at which work

4. Two machines (e.g., elevators) might do identical jobs (e.g., lift 10 passengers three floors) and yet the machines might have different power outputs. Explain how this can be so.

5. There are a variety of units for power. Which of the following would be fitting units of power (though perhaps not standard)? Include all that apply.

6. Two physics students, Will N. Andable and Ben Pumpiniron, are in the weightlifting room. Will lifts the 100-pound barbell over his head 10 times in one minute; Ben lifts the 100-pound barbell over his head 10 times in 10 seconds. Which student does the most work? ____________ Which student delivers the most power? ____________ Explain your answers.

7. During the Powerhouse lab, Jack and Jill ran up the hill. Jack is twice as massive as Jill; yet Jill ascended the same distance in half the time. Who did the most work? ______________ Who delivered the most power? ______________ Explain your answers.

8. An often-used equation for power is

   $$\text{Power} = \text{force} \times \text{velocity}$$

   Express an understanding of the meaning of this equation by using it to explain what type of individuals would be the best choice for lineman on a football team.