Work and Power Practice Problems

1. Bud, a very large man of mass 130 kg, stands on a pogo stick. How much work is done as Bud compresses the spring of the pogo stick 0.50 m?
2. After finishing her Physics homework, Sherita pulls her 50.0 kg body out of the living room chair and climbs up the 5.0 m high flight of stairs to her bedroom. How much work does Sherita do in ascending the stairs?
3. In the previous problem, Sherita slowly ascends the stairs, taking 10.0 s to go from bottom to top. The next evening, in a rush to catch her favorite TV show, she runs up the stairs in 3.0 s.
4. On which night dies Sherita do more work?
5. On which night does Sherita generate more power?
6. On his way off to college, Russell drags his suitcase 15.0 m from the door of his house to the car at a constant speed with a horizontal force of 95.0 N.
7. How much work does Russell do to overcome the force of friction?
8. If the floor has just been waxed, does he have to do more work or less work to move the suitcase? Explain.
9. Katie, a 30.0 kg child, climbs a tree to rescue her cat that is afraid to jump 8.0 m to the ground. How much work does Katie do in order to reach the cat?
10. Marissa does 3.2 J of work to lower the window shade in her bedroom a distance of 0.8 m. How much force must Marissa exert on the window shade?
11. Atlas and Hercules, two carnival sideshow strong men, each lift 200 kg barbells 2.00 m off the ground. Atlas lifts his barbells in 1.00 s and Hercules lifts his in 3.00 s.
12. Which strong man does more work?
13. Calculate which man is more powerful?