**Some Work Problems… Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Alexis finds a physics book on the floor that weighs 1.0 N and lifts it 2 m to place it on a shelf. How much work did she do?

2. Jamie applied a force of 15 N to push a box along a frictionless surface a distance of 3 m. How much work did he do?

3. Austin exerted a force of 9,000 N trying unsuccessfully to move a stalled car. How much work did he do?

4. It took Ronisha 50 J to push a chair 5 m across the floor. With what force did she push the chair?

5. Conner needed to use a force of 100 N to lift a rock. A total of 150 J of work was done. How far did he lift the rock?

6. Bria carried a 4 kg backpack when she walked 25 m along the hallway at a constant speed of 1.5 m/s to get to class. How much work did she do?

7. A 1500 kg elevator moves upward with a constant speed through a vertical distance of 25 m. How much work was done by the tension in the cable?

**CHALLENGE:** 8. What work is done by friction if the block is pushed at constant 3 m/s by a 10 N force for 3 minutes?


**Now, Some Power Problems…**

1. A set of pulleys is used to lift a piano weighing 1,000 N. The piano is lifted 3 m in 60 seconds. How much power is used?

2. What is the power of a kitchen blender if it can perform 3,750 J of work in 15 s?

3. How much work is done using a 500-watt microwave oven for 5 minutes?

4. How much work is done using a 60-watt light bulb for 1 hour?

**CHALLENGE:** A machine has a power rating of 400 watts. How far can it lift a rock in 20 seconds if it applies 100 N of force?

