**Physics 11 Unit 5 Review For Final Exam**

1. How much work is done on a 10.0 kg mass by earth’s gravitational field when the mass drops a distance of 5.0 m?
2. The force of gravity on a box is 100.0 N and the coefficient of friction between the floor and the box is 0.250. How much work is done when the box is pushed along the floor, at a steady speed, for a distance of 15.0m?
3. How powerful is a motor that can lift a 500.0 kg load through a height of 12.0m in a time of 12s?
4. A physics student lifts his 2.0 kg pet rock 2.8 m straight up. He then lets it drop to the ground. Use the law of the conservation of energy to calculate how fast the rock will be moving (a) half way down and (b) just before it hits the ground?
5. How much work must be done to increase the speed of a 12 kg bike ridden by a 68kg rider from 9.2 m/s to 12.7 m/s?
6. What are the three forms of potential energy that a molecule could have?
7. If water has a specific heat capacity of 4200 J/Kg/oC how much heat is needed to warm 50.0 kg of water from 15oC up to 85oC?
8. A 1500 W kettle warms 1.00 kg of water from 18oC to 88oC in a time of 3.6 minutes. How efficient is the kettle?
9. If 10.0 kg of water is heated by 100% efficient 1500W heater for 5.00 min, what will its final temperature be in both Celsius and Kelvin?
10. Convert the following:
    1. 97°C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ K
    2. –35°C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ K
    3. –243°C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ K
    4. 0°C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ K
    5. 62 K = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °C
    6. 378 K = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °C