**PHYSICS TEST REVIEW**

1. What is the difference between thermal energy, heat, and temperature?
2. Describe how something that is 15°C can have more thermal energy than something that is 30°C.



1. What are the units for specific heat capacity?
2. What is the unit for energy?
3. How much energy is needed to heat up 1kg of water by 15°C?
4. How much energy would be needed to raise the temperature of a 5kg block of concrete by 10°C?
5. Can you calculate the energy needed to increase the temperature of 100kg of iron by 40°C?
6. A 20kg concrete block is at 20°C and is heated to 65°C. What is the energy used to heat this block?
7. A 250g copper pipe is heated from 10°C to 31°C. What is the energy needed to heat the pipe?
8. What will be the temperature change if you used 1125J of energy to heat a block of iron weighing 0.5kg?
9. Given 132.8J of energy is required to heat 11.17g of aluminum from 15.73°C to 28.94°C find the specific heat capacity of aluminum.
10. Given the specific heat capacity of lead is 0.129 J/g∙K and that it takes 93.4J of energy to heat a sample of lead from 22.3°C to 40.4°C find the mass of the lead.
11. Given that the specific heat capacity of copper is 0.385J/g∙K and if 81.2J of heat is applied to 17.8g of copper by how much will the temperature of the copper increase?
12. If I have 2 blocks of Aluminium (one of 1kg and one of 10 kg) and heat them up.
Which one heats up the fastest? Explain your answer.
13. What has a higher temperature, the metal seatbelt in your car on a sunny day, or the fabric of the seat? Explain.
14. What is the temperature that water boils at in Kelvin?
15. What is the temperature that water freezes at in Kelvin?
16. If something is 302 K, what is the temperature in Celcius?
17. Discuss how specific heat capacity of the oceans affects Vancouver’s climate.
18. Why is the high specific heat capacity of water a **good** thing for the animals and plants living in the ocean?