# Physics Assigment 2– Thermodynamics

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1. An engine that has an efficiency of 25% takes in 200 J of heat during each cycle. Calculate the amount of work this engine performs.
2. What would be the efficiency of a Carnot engine operating with boiling water as one reservoir and a freezing mixture of ice and water as the other reservoir?
3. From time to time people suggest using the difference in the temperature of water at the surface of the ocean and that near the bottom of the ocean for operating a heat engine. Using $20^0$ C as the high temperature and $4^0$ C as the low temperature what is the efficiency of such a device?
4. A refrigerator uses 400 J of work to remove 200 J of heat from its contents. How much heat must it reject to its surroundings?
5. An inventor claims to have developed an engine that takes in 1000 J of heat and produces 1500 J of work during each cycle. Comment on the validity of this claim.