Name_____ Period _____ Date_____

Quiz 14:4D Thermal Efficiency & Entropy

A heat engine is used to extract 3500 Joules of heat energy from a hot reservoir during each cycle. This engine then does work, after which the engine dumps 1200 Joules of waste heat into a cold reservoir at 325^{o}K.

1. What efficiency of this heat engine? [3 pts]

2. How much of the extracted heat will result in useful output work during each cycle? [3 pts]

3. What is the temperature of the hot reservoir?

4. What will be the change in the entropy of the cold reservoir during each cycle?

5. What will happen to the thermal efficiency of this heat engine if the temperature of the cold reservoir is decreased?