

1. 0.8 of heat filled in room A, 0.5 in room B; hence A→B
2. 16
3. 27.5 degrees F
4. 2.8J
5. Rudolf Clausius, William Thomson (Kelvin)
6. Ludwig Boltzmann
7. 0.735 J/(g-C)
8. 145 degrees F
9. 146 J/(mol-K)
10. 294 K
11. Willard Gibbs
12. Reversible isothermal expansion, reversible adiabatic expansion, reversible isothermal compression, reversible adiabatic compression
13. Antoine Lavoisier
14. 1.09
15. 1.0
16. Adiabatic, isothermal, isobaric
17. 30 degrees C
18. Both increase
19. Increase, pump works harder to cool whole room, so more heat is generated and added to room
20. -94 kJ/mol
21. Lead, iron, aluminum, copper, silver
22. Wiedemann-Franz Law
23. Hmm
24. 524 W/m²
25. 513 W/m²
26. 9320 nm
27. Ice less dense than water
28. 5/3, 7/5
29. a) Otto b) Temperature-Entropy diagram, c) Adiabatic (isentropic) compression, d) 3-4
30. 16.8 kcal