Physics 231 - 10-Nov-99

- Announcements
- Changes of State - Latent Heat
- Transfer of Thermal Energy
  - Radiation
  - Convection
  - Conduction
- Quiz

Changes of State

Transfer of Thermal Energy

- Radiation
- Convection
- Conduction

Q1 - Answer = c
Q2 - Problem A - Last name A-K

The thermal conductivity of goose down is 0.02 W/(m K). Assuming a body are of 2.5 m^2, what is the rate of heat loss for a person sleeping outside in a down, 10 cm thick sleeping bag when the temperature is -50°C? (Body temperature = 37°C)

A. 0.435 W

B. 43.5 W

C. 18.5 W

D. 25 W

E. 435 W

Q1 - Answer = c
Q2 - Problem B - Last Name L-Z

- The thermal conductivity of flannel is 0.096 W/(m K). Assuming a body area of 2.0 m^2, what is the rate of heat loss for a person walking outside in 2 mm thick flannel pajamas when the temperature is -40°C? (Body temperature = 37°C)

A. 7.4 W

B. 1848 W

C. 355 W

D. 3840 W

E. 7392 W