

Bio390

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Problem: Euthermy

The following data were collected by measuring rates of metabolism in an endothermic homeotherm over a range of ambient temperatures.

Ambient Temperature °C	Rate of Metabolism cc O ₂ / (g*h)
0	1.482
10	1.092
within zone of thermal neutrality	0.702

- Estimate the minimal thermal conductance, C_{\min} .
- Estimate core body temperature. Do this both with a graph and by solving an equation directly.
- Determine the lower limit of the zone of thermal neutrality.
- What would be the new lower limit of the zone of thermal neutrality if insulation is decreased to one-half its original value?