

## Answer on Question #61847, Chemistry / General Chemistry

**Condition:** A room contains 47 kg of air. How many kilowatt-hours of energy are necessary to heat the air in the house from 7 °C to 25 °C? The heat capacity of air is 1.03 J/g°C.

**Solution:**

For increasing of temperature from 7 to 25C we need:

$$Q(\text{J/g C}) = 47000(\text{g}) * 1,03(\text{J/g C}) * (25-7) = 871380(\text{J}) \text{ or } 871,380(\text{kJ})$$

$$1 \text{ J} = 2.78 \cdot 10^{-7} \text{ (kWh)},$$

$$\text{here of } 871380(\text{J}) * 2.78 \cdot 10^{-7}(\text{kWh}) = 0.24205 \text{ kWh}$$

**Answer: 0.24205 kWh**

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