Experiments have shown the average frequency of chirping of individual snowy tree crickets (*Oecanthus fultoni*) to be 178 min$^{-1}$ at 25.0°C, 126 min$^{-1}$ at 20.3°C, and 100. min$^{-1}$ at 17.3°C.

a. What is the apparent activation energy of the reaction that controls the chirping?
b. What chirping rate would be expected at 15.0°C?
c. Compare the observed rates and your calculated rate from part b to the rule of thumb that the *Fahrenheit temperature* is 42 plus 0.80 times the number of chirps in 15 seconds.