

For both (1) and (2) report computations to two decimal places.

1. Calder (1984 *Size, Function and Life History*, Cambridge University Press, p. 305) combined several allometric equations to obtain a relation between foraging bouts ($T = \text{days}$) and body size ($M = \text{kg}$). The relation that Calder obtained is that:

$$T = 3.04 M^{-0.26}$$

What is the expected time between foraging bouts for a 12 kg mammal? _____

Write a data equation for 12 kg mammal with a measured time between bouts of 2 days.
_____ = _____ + _____

(2). Based on data from Arrhenius (1921 *Journal of Ecology* 9:95-99) the expression relating the number of species in a large quadrat to the number in a smaller quadrat in a *Pinus* woodland in Sweden is:

$$\frac{N_{sp}(large)}{N_{sp}(small)} = \left(\frac{A_{large}}{A_{small}} \right)^{0.4582}$$

If area is doubled ($A_{large}/A_{small} = 2$) what is the expected ratio of species in the large relative to smaller quadrat? $N_{sp}(large) / N_{sp}(small) =$ _____

If area were increased by a factor of 10, would the number of species increase by a factor of 10? _____

If there are 10 species in a small quadrat, how many species in a quadrat that is 10 times larger? _____
(Report this to the nearest whole number)