

Exercise 1. The use of the `c` and `sum` functions.

This exercise uses epidemiological data. Vicente et al. (2006) analysed data from observations of wild boar and red deer reared on a number of estates in Spain. The dataset contains information on tuberculosis (Tb) in both species, and on the parasite *Elaphostrongylus cervi*, which only infects red deer.

In Zuur et al. (2009), Tb was modelled as a function of the continuous explanatory variable, length of the animal, denoted by LengthCT (CT is an abbreviation of *cabeza-tronco*, which is Spanish for head-body). Tb and Ecervi are shown as a vector of zeros and ones representing absence or presence of Tb and *E. cervi* larvae. Below, the first seven rows of the spreadsheet containing the deer data are given.

Farm	Month	Year	Sex	LengthClass	LengthCT	Ecervi	Tb
MO	11	00	1	1	75	0	0
MO	07	00	2	1	85	0	0
MO	07	01	2	1	91.6	0	1
MO	NA	NA	2	1	95	NA	NA
LN	09	03	1	1	NA	0	0
SE	09	03	2	1	105.5	0	0
QM	11	02	2	1	106	0	0

Using the `c` function, create a variable that contains the length values of the seven animals. Also create a variable that contains the Tb values. Include the NAs. What is the average length of the seven animals?