

1. Name a quantity of interest to you that has dimensions of density (mass per unit area). In the spaces below provide a complete five-part definition of the quantity (name, symbol, procedural statement, numbers, units).

NAME	SYMBOL	TYPICAL VALUES	SCALE (typical units)
------	--------	-------------------	-----------------------

Procedural statement (you may have to invent this)

2. Give an example of a quantity on a nominal type of scale.

NAME	SYMBOL	TYPICAL VALUES	SCALE Not applicable
------	--------	-------------------	-------------------------

Procedural statement (Make sure it is clear, from the procedure, why the variable is on a nominal type of scale)

3. $sum(X) = \sum_{i=1}^n X_i = X_1 + X_2 + \dots + X_n$ n is number of observations (it has no units)

$mean(X) = \bar{X} = \frac{1}{n} \sum X$ $variance(X) = s^2 = \frac{1}{n-1} \sum ((X - \bar{X}))^2$

$mode(X)$ = most commonly occurring value in a set of data.

3a. Report the mean and modal values of the following quantity (don't forget units).

$M = [45 \ 60 \ 40 \ 15 \ 40] \text{ kg}$ $mean(M) =$ _____

$mode(M) =$ _____

3b. What units does the variance of M have? _____