

1a. The median is defined as a value such that half the observations are above and half are below. Report the mean and median values of the following quantity (don't forget units).

$E = [45 \ 60 \ 40 \ 5 \ 50]$  Joules

$mean(E) =$  \_\_\_\_\_

$median(E) =$  \_\_\_\_\_

1b. State which is greater (mean or median) \_\_\_\_\_

1c. Explain why.

2. Name a quantity of interest to you that has dimensions of  $V/T$  ( $= L^3/T$ ). 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)
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Procedural statement (you may have to invent this)

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

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

$$\text{coefficient of dispersion} \quad cd(X) = \frac{variance(X)}{mean(X)}$$

3. Substitute the symbol for your quantity within the parentheses in the following expressions, and fill in the blanks.

$sum( \quad )$  has units of \_\_\_\_\_

$mean( \quad )$  has units of \_\_\_\_\_

$cd( \quad )$  has units of \_\_\_\_\_