Distance, Time, Speed

d – ***distance*** travelled

v – average ***speed***

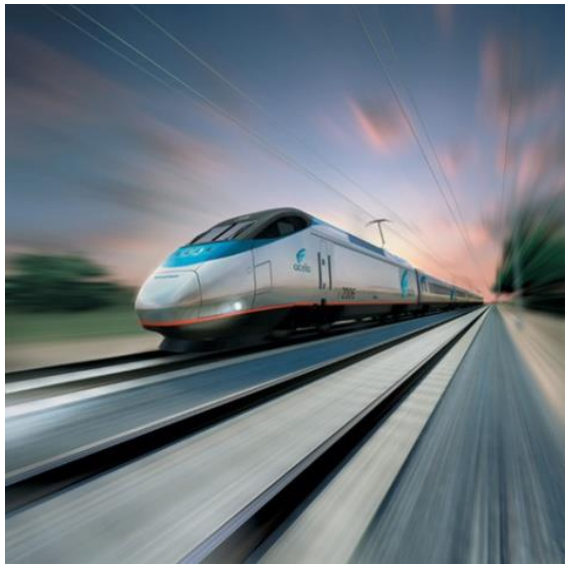
$$v = \frac{d}{\Delta t}$$

$\Delta t = t_{final} - t_{initial}$ – travel ***time***

Δ (Delta) stands for "change"

Physical Quantity	Standard Units (metric system)	Other Units
Length, distance (**d**)	meter (m)	kilometer: 1km = 1000m centimeter: 1cm = 0.01 m $1\,\text{mile} \approx 1.6\,\text{km};\ \ 1\text{ft} \approx 0.3\text{m};\ \ 1\text{inch} \approx 2.5\,\text{cm}$
Time (**t**)	second (s)	hour: 1hr = 3600 s
Speed (**s**)	m/s	km/hr, mile/hr (mph) cm/s, km/s……

Homework 2



Problem 1. Below is the schedule of ***"Acela"*** train that runs from Washington DC to New York City:

Washington (0 mi)	**5:00 am**
Baltimore (41 mi)	**5:30 am**
Philadelphia (135 mi)	**6:30 am**
New York (226 mi)	**7:42 am**

Find the average speed (in miles per hour, mph) for each of the three segments, and for the whole trip. Convert your results first to km/hr, and then to meters per second (m/s):

Segment	Speed (mph)	Speed (km/hr)	Speed (m/s)
Washington-Baltimore			
Baltimore-Philadelphia			
Philadelphia-NYC			
Washington-NYC			

Problem 2. Measure speed of a moving object (toy, rain drop on a window, a pet…). Sketch your experiment, record your data and compute the result (both in the units in which you made your measurements, and in m/s).