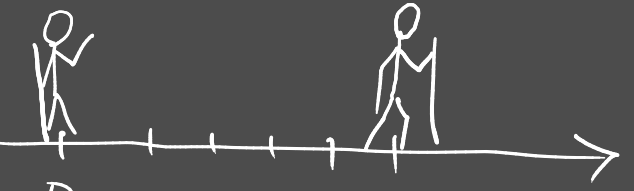
Physics for Society

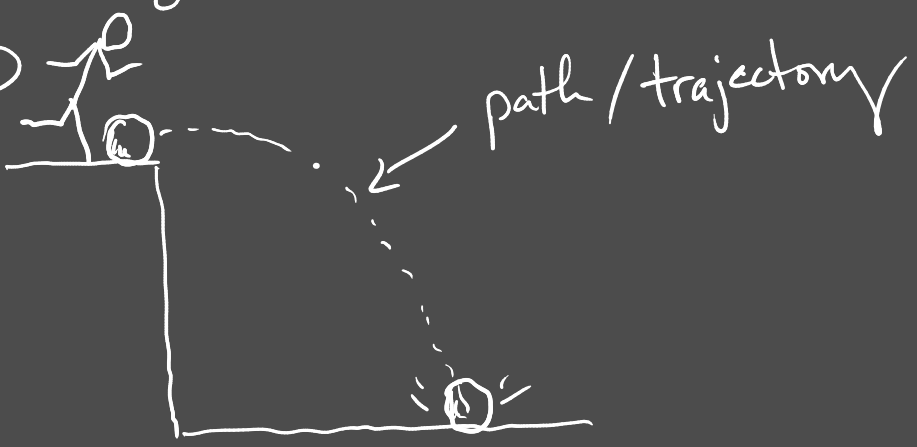
Chapter 1

Measurement

- length → dimension → 1D



→ 2D



  - meters
- time
  - seconds
- mass
  - gram → kilogram

Smallest ⟶ Largest

Milli:	Centi	Deci	Basn	Deca	Hecto	Kilo
1/1000	1/100	1/10	1	10	100	1000
MM	CM		meter			km
mg			gram			kg
ms			second			

So how do we convert from one to another? → Chain method

- 10 meters → centimeters

$$\frac{10 \text{ meter}}{1} \cdot \frac{100 \text{ centimeters}}{1 \text{ meters}} = \boxed{1000} \text{ centimeters}$$

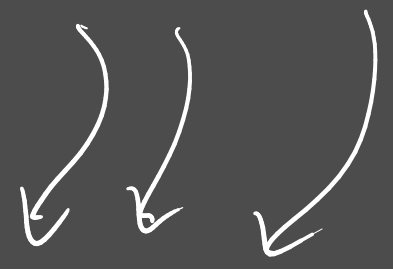
- 1200 milligrams → kilograms

$$1200 \text{ mg} \cdot \frac{1 \text{ g}}{1000 \text{ mg}} \cdot \frac{1 \text{ kg}}{1000 \text{ g}} = \boxed{.0012} \text{ kg}$$

- 60 miles per hour → meters per second

$$\frac{60 \text{ miles}}{1 \text{ hour}} \cdot \text{———} \cdot \text{———} \cdot \text{———} = \boxed{} \frac{\text{meters}}{1 \text{ second}}$$

$$\boxed{2.54 \text{ cm} = 1 \text{ inch}}$$



$$60\ \frac{\text{miles}}{\text{hour}} \cdot \frac{5280\ \text{ft}}{1\ \text{miles}} \cdot \frac{12\ \text{in}}{1\ \text{ft}} \cdot \frac{2.54\ \text{cm}}{1\ \text{in}} \cdot \frac{1\ \text{m}}{100\ \text{cm}} \cdot \frac{1\ \text{hour}}{60\ \text{min}} \cdot \frac{1\ \text{min}}{60\ \text{sec}} = 26.8\ \text{m/s}$$

Scientific Notation

↳ to make big or small numbers easy to compare

$187001250.$ or 81562000.01

1.87001250×10^{8}

$8.156200001 \times 10^{7}$

Significant Figures

62.1 cm

62.100325 cm ← length

30.1 ← width