

Comparison of small and large

Suppose we want to compare the diameter of earth with that of the sun.

Is it possible?

Yes !

How ?

By using exponential forms

Diameter of sun = 1.4×10^9 m

Diameter of earth = 1.2756×10^7 m

$$\text{therefore } \frac{1.4 \times 10^9}{1.2756 \times 10^7} = \frac{1.4 \times 10^{9-7}}{1.2756}$$

$$= 100 \text{ approx}$$

So diameter of sun is 100 times diameter of earth.

Is this interesting?

Example :-

Size of red blood cell is 0.000007 m

Size of plant cell is 0.00001275 m

Compare their sizes.

$$\begin{aligned}\text{Size of red blood cell} &= 0.000007 \text{ m} \\ &= 7 \times 10^{-6} \text{ m}\end{aligned}$$

$$\begin{aligned}\text{Size of plant cell} &= 0.00001275 \text{ m} \\ &= 1.275 \times 10^{-5} \text{ m}\end{aligned}$$

$$\text{Therefore } \frac{7 \times 10^{-6}}{1.275 \times 10^{-5}} = \frac{7 \times 10^{-6 - (-5)}}{1.275}$$

$$= \frac{7 \times 10^{-1}}{1.275}$$

$$= \frac{0.7}{1.275}$$

$$= \frac{0.7}{1.3}$$

$$= \frac{1}{2} \text{ (approx)}$$

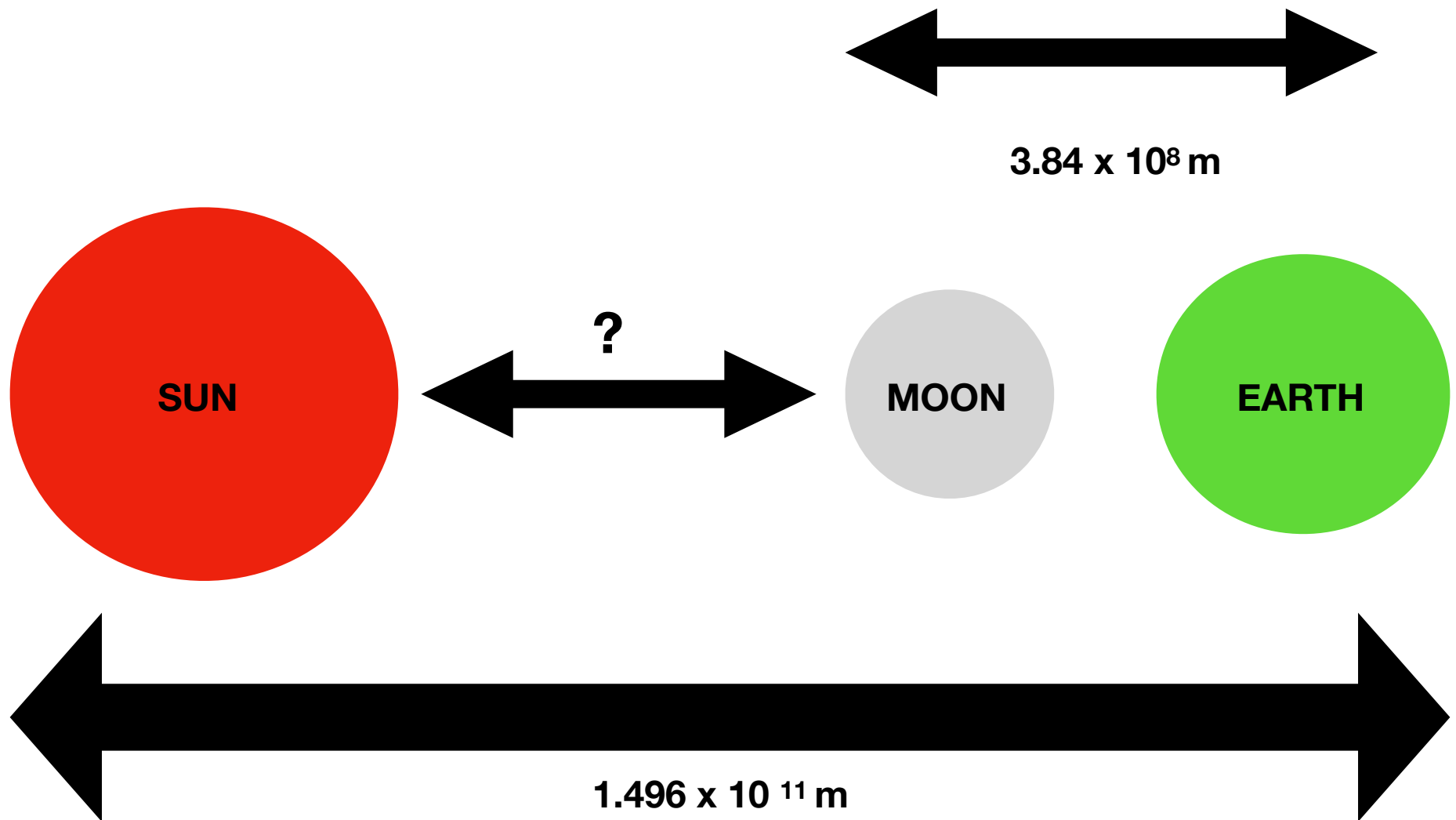
So Red blood cell is half of the plant cell in size.

Example

The distance between sun and earth is 1.496×10^{11} m and the distance between earth and moon is 3.84×10^8 m.

What is the distance between moon and sun at the time of solar eclipse?

During solar Eclipse moon comes in between earth and sun.



Distance between sun and earth = 1.496×10^{11} m

Distance between earth and moon = 3.84×10^8 m

Distance between sun and moon = 1.496×10^{11} m - 3.84×10^8 m

$$= 1.496 \times 1000 \times 10^8 \text{ m} - 3.84 \times 10^8 \text{ m}$$

$$= (1496 - 3.84) \times 10^8 \text{ m}$$

$$= 1492.16 \times 10^8 \text{ m}$$