

1. What is meant by one light year?

The distance light travels in one year.

2. Write down the speed of light.

300 million meters in one second

3. How many million kilometres will light travel in one second?

0.3 million kilometers in one second

4. How many million kilometres will light travel in one minute?

18 million kilometers in one minute

5. How many million kilometres will light travel in one hour?

1080 million kilometers in one hour

6. How many million kilometres will light travel in one day?

25920 million kilometers in one hour

How many million kilometres will light travel in one year?

9460800 million kilometers in one year

8. Our nearest star is proxima centauri and it is 4.2 light years from Earth.

i) How long does it take light to get there?

4.2 years

ii) How many kilometres is proxima centauri from earth?

39735360 million kilometers

9. If Voyager 1 travels at a speed of 62, 000 km hr⁻¹. How many years will it take to reach alpha centauri?

$$\begin{aligned} \text{time} &= \frac{\text{distance}}{\text{speed}} = \frac{39735360 \text{ million km}}{62,000 \text{ km hr}^{-1}} = \frac{39735360 \text{ million km}}{0.062 \text{ million km hr}^{-1}} \\ &= 640892903 \text{ hours} \\ &\text{over } 73,000 \text{ years} \end{aligned}$$