Wednesday, August 28, 2020

"Système International" SI Units

Kilogram	Kg	mass
Meter	m	length
second	s	time
Joule	J	energy
Degree Kelvin	K	temperature
Watt	W	power (energy per time)
radian	rads	angle

SPEED OF LIGHT (scientific notation)

$c = 299\ 792\ 458\ \text{m/s} = 2.99\ 792\ldots \times 10^8\ \text{m/s}$

$\simeq 3.00 \times 10^8\ \text{m/s}$

$\simeq 3.00 \times 10^5\ \text{km/s}$ ← $1000\ \text{m} = 1\ \text{km}$, $10^3\ \text{m} = 1\ \text{km}$

$\simeq 300,000\ \text{km/s}$

In this class $c = 3.00 \times 10^8\ \text{m/s} = 3.00 \times 10^5\ \text{km/s}$.

Light Year

= distance travelled by light in 1 year

in vacuum

$1\ \text{year} = 365\ \text{days/year} \times 24\ \text{hrs/day} \times 60\ \text{min/hr} \times 60\ \text{s/min}$

$= 31,536,000\ \text{s/year}$

$\simeq 31.5 \times 10^6\ \text{s} \simeq 3.15 \times 10^7\ \text{s}$

$\simeq \pi \times 10^7\ \text{s}$

#3

Light year = c × 1 year

$\simeq 3.00 \times 10^{8}$ m/s × $\pi \times 10^{7}$ s

$\simeq 9.45 \times 10^{15}$ m

$\simeq 9.45 \times 10^{12}$ km $\simeq$ 6 trillion miles