

Orders of Magnitude

Physics

Estimating to the nearest power of ten, and why it is a real skill.

Scale reference points.

Scale	Size
Proton	10^{-15} m
Atom	10^{-10} m
Virus	10^{-7} m
Human	10^0 m
Earth	10^7 m
Sun-Earth distance	10^{11} m
Observable universe	10^{26} m

An atom is to a human roughly as a human is to the Sun-Earth distance. Both are about ten orders of magnitude.