

Chapter 1 Problem 26 †

Solution

Rewrite the following in scientific notation without metric prefixes.

a) 89 Tm

T stands for tera, which is 10^{12} . Therefore,

$$89 \text{ Tm} = 89 \times 10^{12} \text{ m} = 8.9 \times 10^{13} \text{ m}$$

b) 89 pm

p stands for pico, which is 10^{-12} . Therefore,

$$89 \text{ pm} = 89 \times 10^{-12} \text{ m} = 8.9 \times 10^{-11} \text{ m}$$

c) 711 mm

m stands for milli, which is 10^{-3} . Therefore,

$$711 \text{ mm} = 711 \times 10^{-3} \text{ m} = 7.11 \times 10^{-1} \text{ m}$$

d) 0.45 μm

μ stands for micro, which is 10^{-6} . Therefore,

$$0.45 \text{ } \mu\text{m} = 0.45 \times 10^{-6} \text{ m} = 4.5 \times 10^{-7} \text{ m}$$

†Problem from University Physics by Ling, Sanny and Moebs (OpenStax)