

Exercise 1.48

(a) The diameter of Earth at the equator is 7926.381 mi. Round this number to three significant figures and express it in standard exponential notation. (b) The circumference of Earth through the poles is 40,008 km. Round this number to four significant figures and express it in standard exponential notation.

Solution

(a) 7926.381 mi: $7930 \text{ mi} = 7.93 \times 10^3 \text{ mi}$

(b) 40,008 km: $40\,010 \text{ km} = 4.001 \times 10^4 \text{ km}$

The uncertainty lies in the tens place for each rounded result.