

Physics I

Conversion of Units

Problem 1.- Lhotse is the fourth highest mountain in the world at 27,941 feet. Convert its elevation to cm. Use the correct number of significant figures.
(Recall that 1 foot = 12 inches, 1 inch = 2.54 cm).

Solution: The height is given in feet, so we need to convert to inches and from inches to cm:

$$h = 27,941 \text{ feet} \left(\frac{12 \text{ inches}}{1 \text{ foot}} \right) \left(\frac{2.54 \text{ cm}}{1 \text{ inch}} \right) = 851,641.68 \text{ cm}$$

Notice that the height is given with 5 significant figures and the factors 12 and 2.54 are exact, so the answer should have only 5 significant figures. Rounding we get:

$$\mathbf{h = 851,640 \text{ cm}}$$