

Example

The tallest state capitol in the United States is the Louisiana State Capitol in Baton Rouge at 450 feet. A souvenir replica is $\frac{1}{1080}$ the height of the actual tower. What is the height of the souvenir using the most appropriate units?

To find the height of the souvenir, multiply the height of the capitol building by the scale factor of $\frac{1}{1080}$.

Height of souvenir = height of tower \cdot scale factor

$$\text{Height of souvenir} = 450 \text{ ft} \cdot \frac{1}{1080}$$

$$\text{Height of souvenir} = 0.4166\overline{6} \text{ ft}$$

It appears that feet may not be the best unit for describing the height of the souvenir, so convert the height of the souvenir from feet to inches.

$$1 \text{ ft} = 12 \text{ in.}$$

$$0.4166\overline{6} \cancel{\text{ft}} \cdot \frac{12 \text{ in.}}{1 \cancel{\text{ft}}} = 5 \text{ in.}$$

Therefore, the height of the souvenir is 5 inches.