

Q-n:

Your favorite FM radio station has a wavelength of 2.261 meters. Convert that length into feet using the centimeter to inch conversion factor.

How many significant figures are in your answer?

Solution:

Step1.

Convert meters to centimeters:

1m=100cm; - conversion factor(cf)

2.261m=226.1cm;

Step2.

Convert cm to inches:

cf 1 cm=2.54*1 inch

$$\frac{226.1cm}{2.54} = 89.02 \text{ inch}$$

Step3:

Convert inches to feet:

Cf 1 ft =in * 0.083333

89.02inch * 0.08333 = 7.418 ft

Answer: 2.261m=7.418 ft (4 significant figures)

Number of significant figures in 2.261m are 4.

When multiplying or dividing, the answer should be rounded to the fewest digits of the numbers in the problem

So our final answer must have 4 significant figures too.