

We know the radius of the sphere of metal (it is $r = 4.7 \text{ cm}$), so, we can find its volume (if we take that $\pi = 3.14$):

$$V = \frac{4}{3} \cdot \pi \cdot r^3 = \frac{4}{3} \cdot \pi \cdot (4.7)^3 = \frac{415.292}{3} \cdot \pi \approx 434.672 \text{ cm}^3.$$

And we know that a density is $\rho = 9.39 \frac{\text{g}}{\text{cm}^3}$. So, we can find the mass of the sphere of metal:

$$m = V \cdot \rho = \frac{415.292}{3} \cdot \pi \cdot 9.39 \approx 4081.573 \text{ g}.$$

Answer: 4081.573 g .