Math in Chemistry - By Equation

Ronald McDonald is driving down the road going $26.4 \frac{km}{hr}$. If he rides for 4.51×10^9 cm, how long does it take him in seconds (sec)?

? sec (step 1)

step 2 - you change cm ⇒ km since km is in the multiple unit info. You do this unit conversion here, not in Equation.

$$S = 26.4 \frac{km}{hr}$$

$$d = 4.51 \times 10^9 cm \left(\frac{1m}{100cm}\right)\left(\frac{1km}{1000m}\right) = 4.51 \times 10^4 km$$

step 3 $$S = \frac{d}{t} \Rightarrow t = \frac{d}{S}$$

$$t = \frac{4.51 \times 10^4 km}{26.4 \frac{km}{hr}} = 1.708 \times 10^3 hr \left(\frac{60 min}{1 hr}\right)\left(\frac{60 sec}{1 min}\right) =$$

$$= 6.148 \times 10^6 sec$$

$$= 6.15 \times 10^6 sec$$

step 4 - need to keep one more sig fig in all sub calculation answer. You only round in final calculation.

step 5