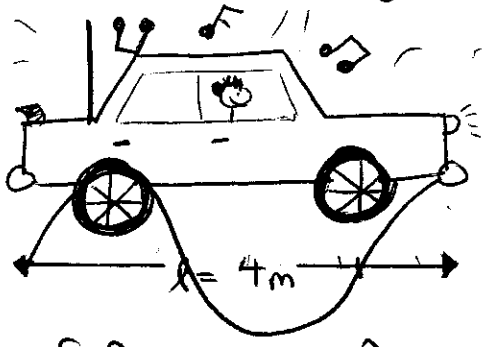
Name: Adam Cohen

Phys 122-401
11/14/06

QUIZ 9: Electromagnetic Waves

You are sitting in your car listening to your favorite radio station: 100.0 MHz.
How many wavelengths of the radio station's signal fit into the length of your car?



$$\begin{cases} c_{light} = 3\times10^8\ m/s \\ 1\,MHz \equiv 10^6\ Hz \end{cases}$$

$$c = f\lambda \Rightarrow \lambda = \frac{c}{f} = \frac{3\times10^8}{100\times10^6}\,m = \frac{3\times10^8}{1\times10^8}\,m = 3\,m$$

$$\Rightarrow 1\ 1/3 \text{ wavelengths}$$