Name Date Class

 **LESSON 1**

**Math Skills**

***Solve One-Step Equations***

The speed of an electromagnetic wave is the product of the wave’s frequency, *f*, and its
wavelength, λ (the Greek letter lambda). All electromagnetic waves travel through space
at a constant speed of 300,000 km/s. Given one other value, the frequency (in Hz) or the
wavelength (in km) can be calculated using the equation below:

*s* = *f*λ

What is the wavelength of an electromagnetic wave that has a frequency of **150,000** Hz?

Step 1 Decide what you need to find.

*The question asks for wavelength. Solve the wave equation for* λ.

Step 2 Rearrange the wave equation by dividing.

*s* = *f*λ

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Step 3 Insert the given values into the equation and solve. (Hint: Hz = 1/s)





**Practice**

**1.** What is the wavelength of an
electromagnetic wave that has a
frequency of 600,000 Hz?

**2.** An electromagnetic wave in space has a
frequency of 80,000 Hz. What is its
wavelength?

**3.** An electromagnetic wave in space has
a wavelength of 4 km. What is its
frequency?

**4.** What is the frequency of an
electromagnetic wave that has a
wavelength of 0.8 km?

Electromagnetic Wave