To calculate the frequency of red light, you divide the speed of light by the wavelength of red light. If the speed of light is about 3×10^8 meters/ second, and the wavelength of some red light is about 6×10^{-7} meters, what is the frequency of the red light in hertz (Hz)? Find the answer in scientific notation and then fill in the missing exponent.

$$\frac{3 \times 10^8}{6 \times 10^{-7}} = 5 \times 10^?$$