

- (a) violet
- (b) indigo
- (c) blue
- (d) green
- (e) yellow
- (f) orange
- (g) red
- (5) infrared (0.7 - 14 μm ; too long to see)
- (6) Microwave (0.1-100 cm)
- (7) radio waves (>100 cm up to several km's)

** photographs record em radiation in the 0.3-0.9 μm region of the spectrum (UV-visible-infrared)**

In Class Exercise

Given the following formulas and conversion factors, fill in the electromagnetic spectrum chart below.

$\lambda =$ wavelength (units: km, m, cm, μm , nm)
 $f =$ frequency (units: 1 hertz = 1 hz = 1 cycle/sec = 1 sec^{-1})
 $c =$ speed of light = 3×10^8 m/sec
 $c = \lambda f$ where $\lambda =$ wavelength, $f =$ frequency

Length Conversion: 1 m = 100 cm = 10^6 μm = 10^9 nm

Show all your work in the space provided.

Wavelength	Frequency (Hz)	Class of EM Radiation
2 km	_____	_____
0.5 μm	_____	_____
0.035 nm	_____	_____
20 cm	_____	_____
10 μm	_____	_____

What is the range of wavelength in centimeters, that is detected by your eye or standard camera film?