Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_

**Electromagnetic Spectrum and Practice Problems**

**Directions:**

1. Draw an electromagnetic spectrum with frequency ranges. Include the following:

* *Radiowaves*
* *Microwave*s
* *Infrared*
* *visible spectrum*
* *Ultraviolet*
* *x rays*
* *gamma rays*

1. Label your spectrum with wavelengths () and frequencies ().

|  |  |  |
| --- | --- | --- |
| Type of Electromagnetic Radiation | Approximate wavelength () ranges | Approximate frequency () ranges |
| Radiowaves | 3 x 104 – 3 x 10-1 m | 104 – 109 Hz |
| Microwaves | 3 x 10-1 – 3 x 10-3 m | 109 – 1011 Hz |
| Infrared | 3 x 10-3 – 3 x 10-7 m | 1011 – 1015 Hz |
| Visible spectrum | 3 x 10-7 m | 1015 Hz |
| Ultraviolet | 3 x 10-7 m – 3 x 10-8 m | 1015 – 1016 Hz |
| X rays | 3 x 10-8 – 3 x 10-11 m | 1016 – 1019 HZ |
| Gamma rays | 3 x 10-11 – 3 x 10-15 m | 1019 – 1023 Hz |

Drawing: Electromagnetic Spectrum

1. Draw the visible light spectrum from longest wavelength to shortest wavelength.
2. Name the uses of the following light waves:
   1. Radiowaves-
   2. Microwaves-
   3. Infrared Rays-
   4. Visible light-
   5. Ultraviolet light-
   6. X-Rays-
   7. Gamma Rays-
3. List the electromagnetic spectrum from largest energy to smallest energy.
4. What is the difference between UVA, UVB, and UVC rays?