

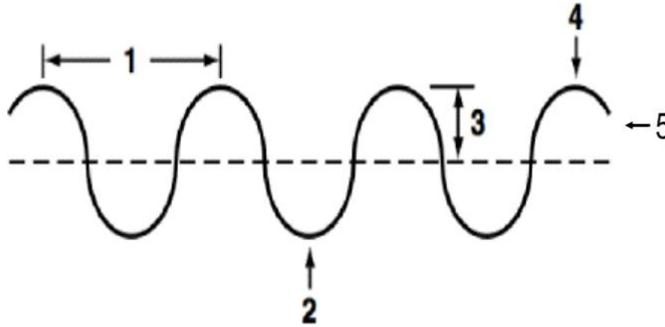
NAME _____

HOUR _____

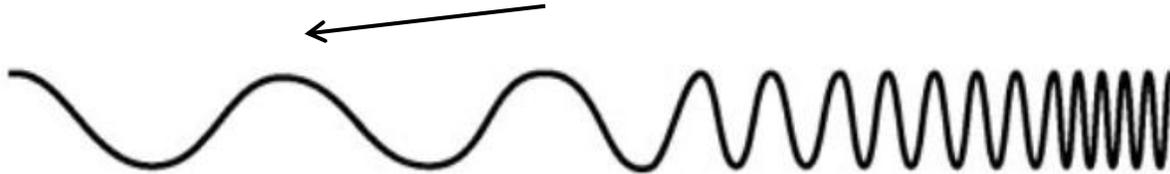
The Electromagnetic Spectrum

Label the parts of a wave using the terms: *crest*, *trough*, *frequency*, *wavelength*, *amplitude*

1. _____
2. _____
3. _____
4. _____
5. _____

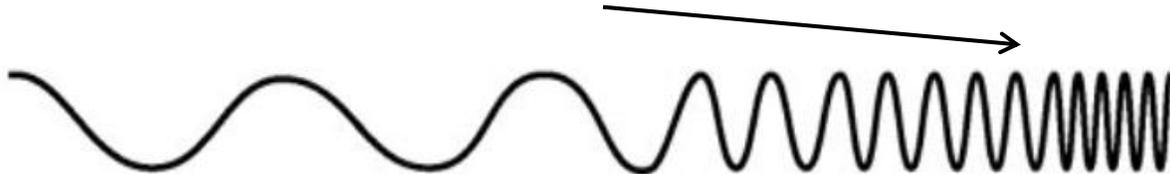


6. Circle the appropriate words to describe the waves at the LEFT end of this wave spectrum



- a. Long / Short wavelength
- b. High / Low frequency
- c. High / Low energy

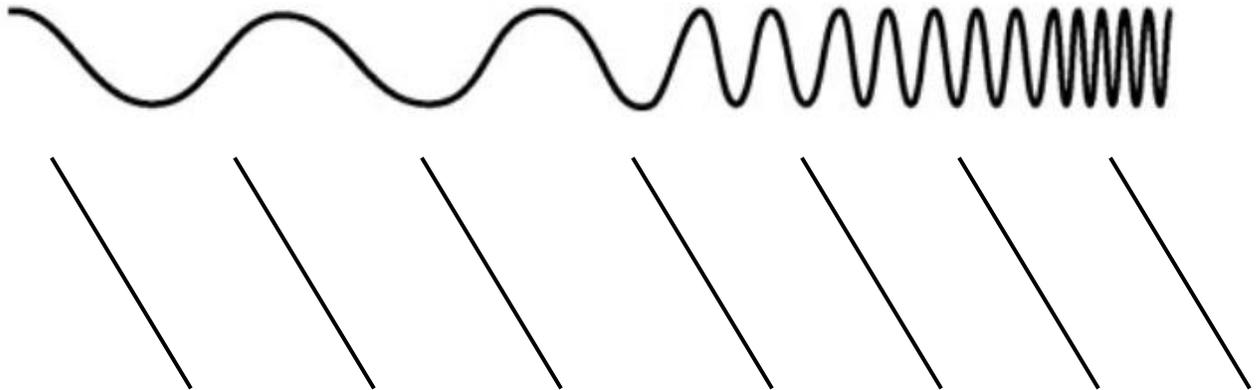
7. Circle the appropriate words to describe the waves at the RIGHT end of this wave spectrum



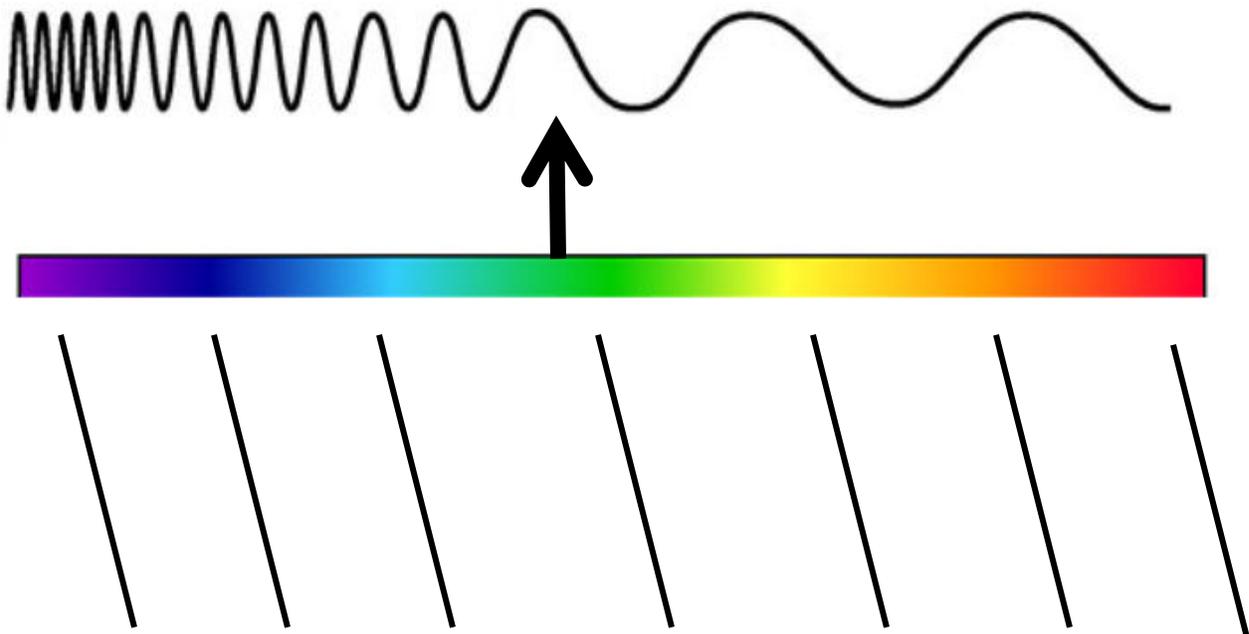
- a. Long / Short wavelength
- b. High / Low frequency
- c. High / Low energy

8. Fill in the blanks underneath the wave spectrum to indicate the relative positions of each type of electromagnetic radiation from the given word bank.

gamma	ultraviolet	visible	x-rays
microwaves	infrared	radio/tv	



9. Look **carefully** at the electromagnetic spectrum shown below paying attention to the wavelengths and frequencies indicated. The visible portion of the electromagnetic spectrum has been enlarged below the spectrum. Fill in the blanks with the correct colors from the visible spectrum according to their wavelength, frequency and energy.



10. Circle the correct answer

- a. Which has a longer wavelength? Microwaves or Infrared
- b. Which has a lower frequency? X rays or Gamma rays
- c. Which has a higher frequency? Visible or Ultraviolet
- d. Which has more energy? Radio/TV or Infrared
- e. Which has more energy? Red light or Green light
- f. Which has a higher frequency? Orange light or Blue light
- g. Which has a shorter wavelength? Ultraviolet or X rays

11. The radio station Z107.7 broadcasts radio waves. What do the numbers 107.7 represent?

12. Compare the radio waves broadcast by the two stations, WIL-92.3 and KSHE-94.7

- a. Which station broadcasts waves with more energy?
- b. Which station broadcasts waves with a shorter wavelength?
- c. Which station broadcasts waves with a higher frequency?

13. What is the relationship between frequency and wavelength?

14. What is the relationship between frequency and energy?

15. What is the relationship between wavelength and energy?