



Name: _____

Period: _____ Date: _____

Exploring the Relationship Between Wavelength and Frequency

1. What is the apparent shape of the graph of wavelength vs. frequency?
2. What is the linear regression equation obtained for wavelength vs. frequency?
3. What convinced you that this relationship is not linear?
4. Is the relationship between wavelength and $1/\text{frequency}$ linear?
5. What is the linear regression equation obtained for wavelength vs. $1/\text{frequency}$?
6. Is the graph of $1/\text{frequency}$ vs. wavelength linear?

7. What is the linear regression equation obtained for $1/\text{frequency}$ vs. wavelength

8. The y-intercept, b , in this relationship is approximately what integer value?

9. What is the value of the slope, m , in this relationship?

10. m in this relationship is a very important and special value in science. Identify the significance of m for the linear regression equation obtained for $1/\text{frequency}$ vs. wavelength.

11. Is the variation between wavelength and frequency direct or inverse?

12. What is the name of the shape of the graph obtained for the type of variation identified in question #11.

13. What equation is typically used in science to express the relationship between wavelength and frequency?