

Name:

Period:

Conceptual and Honors Physics: HW: Light II

1. The wavelength and frequency of several EM waves in different mediums are given below. Find the speed of each.

- a. $\lambda = .000006 \text{ m}, f = 50,000,000,000,000 \text{ Hz}$

- b. $\lambda = .000000000005 \text{ m}, f = 2,000,000,000,000,000,000 \text{ Hz}$

- c. $\lambda = .003 \text{ m}, f = 75,187,969,924 \text{ Hz}$

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2. Are any of the EM waves in problem #1 travelling through a vacuum? How do you know?
3. While watching a science fiction movie, you see and hear a distant explosion in space at the same time. Explain TWO physics mistakes in this scene of the movie.

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