

Light and Telescopes.

1. Light waves differ fundamentally from sound waves because they
 - a) can have various wavelengths
 - b) can travel in a vacuum
 - c) travel from place to place instantly
 - d) have an unchanging amplitude

2. Which of these numbers is the smallest?
 - a) 0.3×10^3
 - b) 3.0×10^1
 - c) 0.3×10^{-2}
 - d) 3.0×10^{-4}

3. If a certain type of electromagnetic radiation has a shorter wavelength, it also has
 - a) a higher speed
 - b) a lower frequency
 - c) a higher frequency
 - d) a lower energy

4. Which of the following would be the preferable telescope for an optical astronomer
 - a) a 10 metre telescope in space
 - b) a 10 metre telescope on the top of a 4000 m mountain
 - c) a 30 metre telescope on the top of a 2000 m mountain with adaptive optics
 - d) a 50 metre telescope that is easily accessible, e.g. just outside of Vancouver