

Solutions

2.1 A At a boundary, frequency stays fixed by the source. A change of speed changes wavelength. Refraction follows from speed differences; angles are measured from the normal.

2.2 $v=f\lambda=8\times0.25=2.0$ m/s.

2.3 False. The wave frequency does not change simply because the medium changes. A longitudinal wave has oscillations parallel to propagation.

2.4 wavelength. wavelength means Distance between successive points in phase.

3.1 Wavelengths are 0.40 and 0.20 m; frequency remains 5 Hz because the boundary is driven by the same source. Moving boundaries require a different analysis.