

p. 38 # 36, 37

36. a fisherman notices that wave crests pass the bow of his anchored boat every 3.0s. He measures the distance between two crests to be 6.5m. how fast are the waves travelling? (2SF)

$$v_w = \lambda f \rightarrow v_w = 6.5\text{m} \cdot \frac{1}{3\text{s}} \rightarrow v = \underline{2.2\text{m/s}}$$

37. a sound wave in air has a frequency of 262Hz & travels with a speed of 343m/s. how far apart are the wave crests (compressions)? (3SF)

$$v_w = \lambda f \rightarrow \lambda = \frac{v}{f} \rightarrow \lambda = \frac{343}{262\text{Hz}} \rightarrow \lambda = \underline{1.31\text{m}}$$