

Question 1:

A submarine emits a sonar pulse, which returns from an underwater cliff in 1.02 s. If the speed of sound in salt water is 1531 m/s, how far away is the cliff?

Answer 1:

$$t = 1.02 \text{ s}, \quad v = 1531 \text{ m/s}$$

$$\text{distance } d = v \times t = 1531 \times 1.022 \text{ m} = 780.81 \text{ m}$$