

Answer on Question #47919-Physics-Mechanics-Kinematics-Dynamics

A person stands at a point 340 m in front of the face of a sheer cliff. If the person shouts, how much time will elapse before an echo is heard?

- A) 0.49 s B) 0.99 s C) 340 s D) 344 s E) 1.98 s

Solution

The sound wave will have to traverse $2 \cdot 340\text{m} = 680\text{m}$ (as it has to reach the cliff and then return to the person)

Velocity of sound is $343 \frac{\text{m}}{\text{s}}$.

Time elapsed is

$$t = \frac{680}{343} = 1.98 \text{ s.}$$

Answer: E) 1.98 s.