

Answer on Question #47914 – Physics, Mechanics | Kinematics | Dynamics

What frequency of sound traveling in air has a wavelength equal to 1.5 m.

A) 344 Hz B) 516 Hz C) 76 Hz

D) 0.004 Hz E) 229 Hz

Solution:

$v = 343 \frac{m}{s}$ – velocity of sound in air;

$\lambda = 1.5 m$ – wavelength;

Formula for the wavelength:

$$\lambda = v \cdot T = v \cdot \frac{1}{f}$$
$$f = \frac{v}{\lambda} = \frac{343 \frac{m}{s}}{1.5 m} = 229 Hz$$

Answer: E) 229 Hz