Problem 38

The speed of sound is measured to be 342 m/s on a certain day. What is this measurement in kilometers per hour?

Solution

Multiply the given speed by the appropriate conversion factors to get the desired units.

$$342 \, \frac{\text{m}}{\text{s}} = 342 \, \frac{\cancel{\text{m}}}{\cancel{\text{s}}} \times \frac{1 \text{ km}}{1000 \, \cancel{\text{m}}} \times \frac{60 \, \cancel{\text{s}}}{1 \, \cancel{\text{min}}} \times \frac{60 \, \cancel{\text{min}}}{1 \text{ h}} \approx 1230 \, \frac{\text{km}}{\text{h}}$$