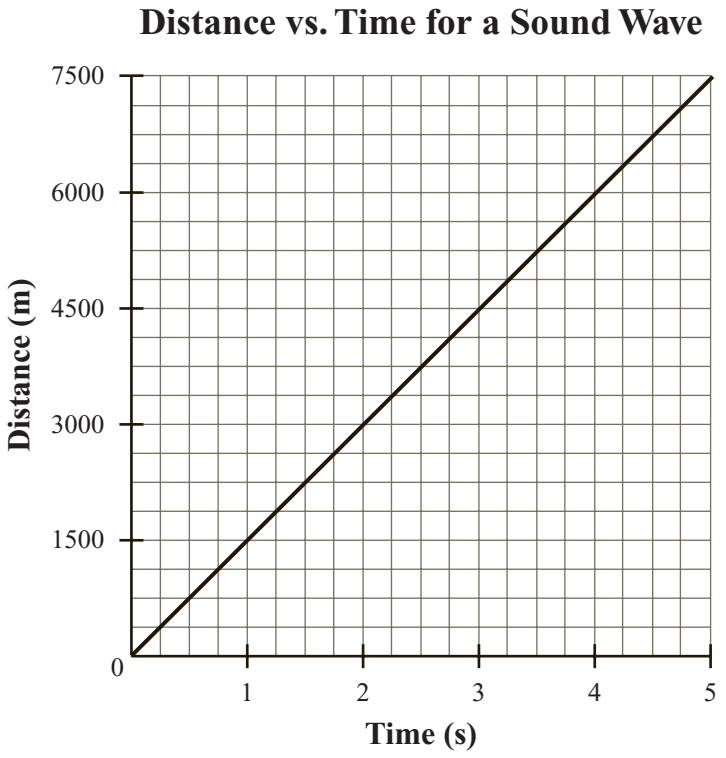
12 The graph below shows the relationship between distance and time for a sound wave moving through a liquid.



a. Calculate the speed of the sound wave. Show your calculations and include units in your answer.

b. Copy the graph onto the grid in your Student Answer Booklet. On your graph:

- Label the line you copied "liquid."
- Draw a line labeled "gas" to represent how this sound wave would travel through a typical gas.
- Draw a line labeled "solid" to represent how this sound wave would travel through a typical solid.

c. Explain your reasoning for the placement of the new lines (gas, solid) you drew in part (b).

d. Identify **one** property or characteristic of a sound wave that remains the same when it moves from a liquid into a gas or a solid.