The Speed of Sound

A. Use the table to fill in the blanks in A and answer question B.

In most places, sound travels faster in
(1) ____________________ weather than
in (2) ____________________ weather.

To slow down sound the most in your house,
use (3) ____________________ in
the walls. If that is not available, use
(4) ____________________. That is the
next best thing. Whatever you do, don't use
(5) ____________________. Sound
travels through it at 17,100 feet per
(6) ____________________.

<table>
<thead>
<tr>
<th>The Speed of Sound in Various Substances</th>
<th>Speed (feet per second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air at 32°F</td>
<td>1,085</td>
</tr>
<tr>
<td>Air at 70°F</td>
<td>1,129</td>
</tr>
<tr>
<td>Aluminum</td>
<td>16,000</td>
</tr>
<tr>
<td>Brick</td>
<td>11,900</td>
</tr>
<tr>
<td>Glass</td>
<td>14,900</td>
</tr>
<tr>
<td>Quartz</td>
<td>18,000</td>
</tr>
<tr>
<td>Seawater at 77°F</td>
<td>5,023</td>
</tr>
<tr>
<td>Steel</td>
<td>17,100</td>
</tr>
<tr>
<td>Wood (maple)</td>
<td>13,480</td>
</tr>
</tbody>
</table>

Sound travels at different speeds through
different substances.

B. Sonic booms occur when a plane travels faster than the
speed of sound. Do you think it would be easier to break
the sound barrier in winter or in summer? Why?

C. In a thunder and lightning storm, you always see the
lightning before you hear the thunder. In fact, the thunder
is actually the sound of the lightning flash. Circle the facts
below that can be supported by this information.

1. a. Sound waves travel faster than light
waves.
b. Light waves travel faster than sound
waves.
c. Light waves and sound waves travel at
the same speed.

2. a. The storm is far away when there is
a short time between thunder and
lightning.
b. The storm is close when there is a short
time between thunder and lightning.
c. Thunder and lightning can be heard
and seen at the same time.