Temperature Dependence of the Speed of Sound

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| **Temperature (Celsius)** | **Speed of sound (m/s)** | **Density of air (kg/m3)** |
| 35 | 351.88 | 1.1455 |
| 30 | 349.02 | 1.1644 |
| 25 | 346.13 | 1.1839 |
| 20 | 343.21 | 1.2041 |
| 15 | 340.27 | 1.225 |
| 10 | 337.31 | 1.2466 |
| 5 | 334.32 | 1.269 |
| 0 | 331.3 | 1.2922 |
| -5 | 328.25 | 1.3163 |
| -10 | 325.18 | 1.3413 |
| -15 | 322.07 | 1.3673 |
| -20 | 318.94 | 1.3943 |
| -25 | 315.77 | 1.4224 |

https://en.wikipedia.org/wiki/Speed\_of\_sound

Paste the data above into Excel and use it to make a plot of ***Speed of Sound versus Temperature***. Title the graph, label the axes, fit the data to a line and have that equation displayed on the graph.

**Paste graph here.**

What is the slope?

What are the units of the slope?

What is the y-intercept?

What are the units of the y-intercept?

What are today’s predicted high and low temperatures? What are the corresponding speeds of sound? Did you use interpolation or extrapolation?

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| --- | --- | --- |
| Low Temp: | Low Temp Speed of Sound: | Interpolation or extrapolation? |
| High Temp: | High Temp Speed of Sound: | Interpolation or extrapolation? |