

Math

Why do I get different answers when I use the equation for the speed of sound in Physical Science?

Most likely, you are not following the proper order of operations as required in arithmetic. In an equation which involves addition (or subtraction) and multiplication (or division), you **MUST** do the multiplication and division **FIRST**, then you do the addition and subtraction. For example, in the equation:

$$2 + 6 \times 3 - 10/5$$

You must do the multiplication and division first to get:

$$2 + 18 - 2$$

Then you can do the addition and subtraction to get 18.

If you were to do this problem and **NOT** follow the proper order of operations, here's what would happen:

$$2 + 6 \times 3 - 10/5$$

Addition

$$8 \times 3 - 10/5$$

Multiplication

$$24 - 10/5$$

Subtraction

$$14/5$$

Division

And you would get the answer of 2.8, which is entirely wrong. This is why it is absolutely necessary to follow the order of operations.

Here's another example equation. Suppose the temperature is 28° C:

$$v = 331.5 + 0.60 \times T$$

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$$v = 331.5 + 0.60 \times 28$$

the first thing you must do is 0.60×28 , so that you get:

$$v = 331.5 + 16.8$$

Now you can add to get

348.3

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