

## Algebra and Formulas: Conditional sentences

1) Read the explanation below:

### **Talking about deductions**

We can talk about deductions with **if + present simple, then + present simple**.

#### **Examples:**

*If the walls beside the window are equal, then we can call the length of the two walls  $2x$ .*

*If  $2x$  equals 6 metres, then  $x$  must be 3 metres.*

2) Read and correct the mistake in each sentence

- 1 If the walls next to the window is equal, then you don't need to measure them.
- 2 If the side walls are equal, the combined length of the two walls must  $2x$ .
- 3 So wall A is 3 metres long, then wall B must be 3 metres.
- 4 If we represented 3 m as 3,000 mm, then we can solve the equation.
- 5 If we are moving 400 to the other side,  $3,000 - 400$  is  $2x$ .

3) Complete the equation with the words from the box

and    if    means    must    so    then    therefore

- 1 \_\_\_\_\_ wall A = 3,000 mm and wall B =  $2x + 400$
- 2 \_\_\_\_\_  $2x + 400 = 3,000$
- 3 which \_\_\_\_\_ that  $2x = 3,000 - 400$
- 4 \_\_\_\_\_  $2x$
- 5 \_\_\_\_\_ be 2,600
- 6 \_\_\_\_\_  $x = 2,600 \div 2$
- 7 \_\_\_\_\_  $x = 1,300$



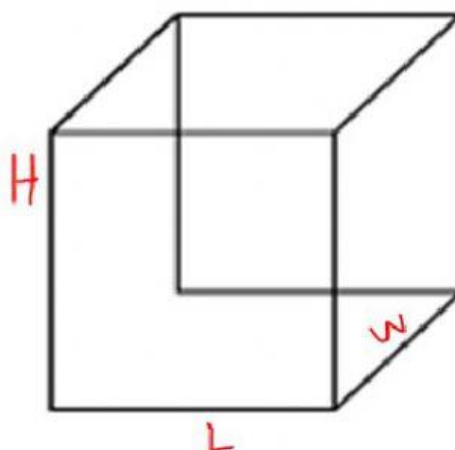
Let's practice:

This cube represents the classroom.

Average volume of a person =  $p \text{ cm}^3$

The total volume of furniture =  $f \text{ cm}^3$

How much air is there in the room? Write explain the equation (not a calculation)



and



5) Listen and complete the summary of the reading text. Write one word or number in each space.

When there is only one \_\_\_\_\_ in an equation, you can work out its value with \_\_\_\_\_

We can represent the unknown by a \_\_\_\_\_, for example,  $x$ .

If  $2x + 400 = 3,000$ , then  $2x =$  \_\_\_\_\_ - 400. Therefore  $2x = 2,600$ , which \_\_\_\_\_ that  $x = 1,300$ .

6) Read the conversation. Circle the formula or formulas they are talking about.

$$s = \frac{d}{t}$$

$$d = st$$

$$t = \frac{d}{s}$$

Man 1: Hi, there. How are you?

Man 2: Fine. And you?

Man 1: OK. Well, actually, I'm a bit tired.

Man 2: Why's that?

Man 1: I've just driven from London.

Man 2: Really? How long did it take?

Man 1: Two hours.

Man 2: What was your average speed?

Man 1: I don't know.

Man 2: Well, it's easy to work out, isn't it?

Man 1: Is it?

Man 2: Yes. How far is it from London?

Man 1: 100 kilometres.

Man 2: So, your average speed was 50 kilometres per hour.

Man 1: How did you work that out?

Man 2: I used the formula  $s$  equals  $d$  over  $t$ .

Man 1: What does that mean?

Man 2: Speed equals distance divided by time.

Man 1: Right. So you can calculate the speed if you know the distance and the time.

Man 2: You can do more than that. You can work out any of the variables if you know the other two.

Man 1: I don't understand.

Man 2: Well, if  $s$  equals  $d$  over  $t$ , then  $d$  must be  $s$  times  $t$ . Change the side and change the sign, remember?

Man 1: Right. And  $t$  must be  $d$  over  $s$ .

Man 2: Exactly.