Difficulties in Aligning Answers and Scale: Essential Discussion

Now try comparing the following three sizes of photo passes:

Is a 2 cm x 3 cm passport photo comparable with a 3 cm x 4 cm photo?

$$\frac{2\ cm}{3\ cm} = \frac{3\ cm}{4\ cm} \Leftrightarrow \frac{2}{3} = \frac{3}{4} \Leftrightarrow 2 \times 4 = 3 \times 3 \Leftrightarrow 8 = 9$$, it turns out that the statement is wrong, so it is not

comparable

Now compare a 2 cm x 3 cm photo pass with a 4 cm x 6 cm photo pass!

$$\frac{2\ cm}{3\ cm} = \frac{4\ cm}{6\ cm} \Leftrightarrow \frac{2}{3} = \frac{4}{6} \Leftrightarrow 2 \times 6 = 3 \times 4 \Leftrightarrow 12 = 12$$ It turns out that the statement is true, so it's comparable.

We will use the comparison example above to determine the size of an object with its model/copy/package.

a. An airplane model has a body length of 18 cm and a wingspan of 12 cm. If the wingspan of the real airplane is 8 m, what is the length of the real fuselage?

Answer:

So the actual length of the fuselage is 12 meters.

b. A multi-storey building seen from the front is 20 meters wide and 60 meters high. If the height of the building on the model is 12 cm, what is the width of the building on the model?

Answer:

$$\frac{lebar\ model}{tinggi\ model} = \frac{lebar\ gedung}{tinggi\ gedung}$$

$$\frac{l\ cm}{12\ cm} = \frac{20\ m}{60\ m}$$

$$\frac{l}{12} = \frac{1}{3}$$

$$l = \frac{12 \times 1}{3}$$

$$= 4\ cm$$

So the width of the building on the model is 4 cm.

3. Value Comparison

Equivalent comparison deals with the comparison of two quantities, where if one quantity changes up/down, then the other quantity also changes up/down.
An example of a problem related to value comparison is :

- Amount of goods purchased at the price to be paid
- Total fuel consumption and distance traveled
- Number of paint cans and surface area that can be painted
- and others