

Ratio and Proportion Handout(1)

This handout will explain how to express simple ratios and problems on ratios. After completion of the worksheet you should be able to:

- A. Set up a ratio with like units
- B. Set up a ratio with unlike units

Ratios

- Definition: A ratio is a comparison between two numbers. A ratio statement can be written three ways:

Eg-You bake cookies and the recipe calls for 4 parts (cups) flour to 2 parts (cups) sugar. The comparison of flour to sugar is a ratio: 4 to 2, 4:2, $\frac{4}{2}$

To set up a ratio , on the LHS write the corresponding terms in fraction form and equate it to its corresponding value.

E.g. Age of father and son are 39 and a13 years respectively ,now to find the ratio of their ages we represent as follows.

To write in fraction form we write

$$(\text{Age of father/ Age of son}) = 39/ 13$$

Or father: son = 3: 1

E.g. The number of cars to bikes in a lane are 9 and25 respectively.to find the ratio we write

cars : bikes is 9: 25

e.g Arun walks 2km to reach his school but Raghu walks 800 m.to find the ratio of distance travelled we convert km to m, (always converting bigger unit to smaller unit is easier) 2km = 2000m.

$$\begin{aligned}(\text{distance covered by Arun} / \text{distance covered by Raghu}) &= 2000/ 800 \\ &= 5: 2\end{aligned}$$

Problem

Set I Express the following as ratios in fraction form and reduce

- a. 3 to 12
- b. 25 to 5
- c. 6 to 30

Note- the problem “3 hours to 60 minutes” These units (hours and minutes) are not alike.

You must convert one to the other’s unit so that you have minutes to minutes or hours to hours.

It is easier to convert the bigger unit (hours) to the smaller unit (minutes).

Now you know that 3 hours is the same as 180 minutes so you can substitute 180 , and find ratio of 180 to 60.

Similarly for other units.

- a. 100 mm to 10 cm
- b. 42min to 2 hours
- f. 7kg to 9800g