

Questions from Tina Tran (28 Feb)

Q1.

In a school, the ratio of the number of teachers who wear spectacles to the number of teachers who do not wear spectacles is 11 : 5.

$\frac{2}{3}$ of the male teachers and $\frac{7}{10}$ of the female teachers wear spectacles.

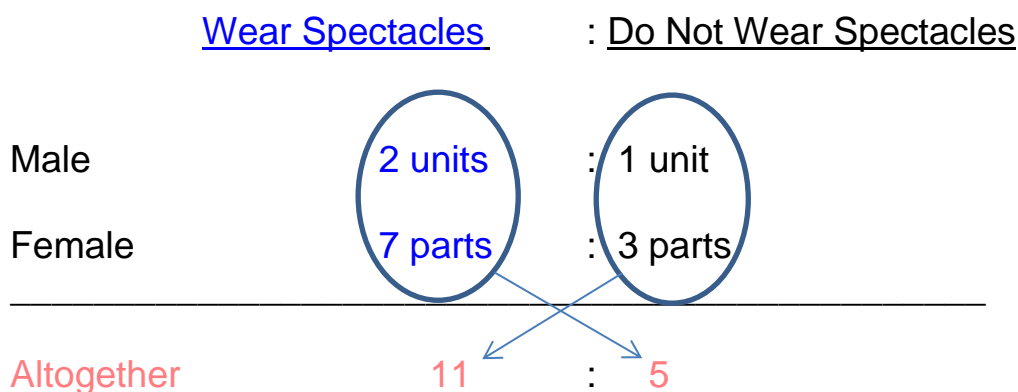
What is the ratio of the number of male teachers to the number of female teachers?

Solution:

Male teachers → 3 units

Female teachers → 10 parts

(Note: 1 unit is not equal to 1 part, so ratio of male teachers to female teachers is NOT 3 : 10)



$$5 \times (2 \text{ units} + 7 \text{ parts}) \rightarrow 11 \times (1 \text{ unit} + 3 \text{ parts})$$

$$10 \text{ units} + 35 \text{ parts} \rightarrow 11 \text{ units} + 33 \text{ parts}$$

$$1 \text{ unit} \rightarrow 2 \text{ parts}$$

$$\text{Male teachers (3 units)} \rightarrow 6 \text{ parts}$$

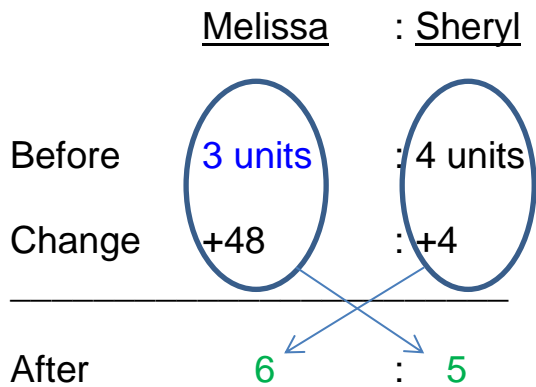
$$\text{Ratio of Male Teachers to Female Teachers} = 6 \text{ parts} : 10 \text{ parts} = 3 : 5$$

Ans: Ratio = 3 : 5

Q2.

Melissa had $\frac{3}{4}$ as many coins as Sheryl. After Melissa and Sheryl received another 48 and 4 coins respectively, Melissa had $\frac{1}{5}$ more coins than Sheryl. How many coins did Melissa have at first?

Solution:



$$5 \times (3 \text{ units} + 48) \rightarrow 6 \times (4 \text{ units} + 4)$$

$$15 \text{ units} + 240 \rightarrow 24 \text{ units} + 24$$

$$9 \text{ units} \rightarrow 216$$

$$1 \text{ unit} \rightarrow 24$$

$$3 \text{ units} \rightarrow 72$$

Ans: Melissa had 72 coins at first.