

## **LESSON 5: Proportion Concept**

### **APPLICABILITY**

For problems where proportions of objects are given, it is more efficient to approach it using:

$$\text{Total Value} = \text{Value} \times \text{Number}$$

## **GUIDED EXAMPLE 1**

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At a carnival, every girl was given 2 candy floss and every boy was given 3 candy floss. There were thrice as many girls as boys. A total of 63 candy floss were given out. How many girls were there at the carnival?

**GUIDED EXAMPLE 2**

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The ratio of the price of a T-shirt to the price of a dress was 1:5. Each T-shirt cost \$5. On a weekend, the amount of money collected from the sale of both T-shirts and dresses was \$6720. If the total number of T-shirts sold made up of 20% of the total number of dresses and T-shirts sold, how many dresses were sold during the weekend?

## **GUIDED EXAMPLE 3**

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A fruit stall owner bought 2 times as many apples as oranges.  
He spent \$510 altogether. An orange costs \$0.20 more than an apple.  
The total cost of the apples was \$102 more than the total cost of the oranges.  
Find the cost each fruit.

## **GUIDED EXAMPLE 4**

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There are some 10-cent, 20-cent and some 50-cent coins in a box.

There are thrice as many 10-cent coins as there are 50-cent coins.

The number of 20-cent coins is twice the sum of number of 10-cent and 50-cent coins.

Given that the total amount of money in the box is \$62.40,

how many 10-cent coins are there?

## **GUIDED EXAMPLE 5**

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Peter paid \$1836 for some \$2, \$10 and \$20 gift vouchers.

He bought 18 more \$10 vouchers than \$2 vouchers.

There were thrice as many \$20 vouchers as there were \$10 vouchers.

How many \$10 vouchers did he buy?

## **BUILD YOUR UNDERSTANDING!**

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1. The mass of a plate is three times the mass of a cup.  
The total mass of 3 plates and 2 cups is 1320g.  
What is the mass of a plate?

2. A computer ink cartridge costs \$16.  
A shop owner bought 3.5 times as many computer mouse as ink cartridges.  
Each computer mouse costs  $\frac{1}{4}$  the cost of a computer ink cartridge.  
He paid a total of \$6600 altogether.
- a) How many ink cartridges did he buy?  
b) How much did he pay for all the mouse?



3. The ratio of the number of chickens to the number of goats is 3:5.  
The ratio of the number of snakes to the number of goats is 4:3.  
Given that these three groups of animals have 2496 legs altogether,  
how many snakes are there?

4. Mrs. Yap used 4 types of spices to cook curry.  
Each packet of spices A, B C and D weighs 25g, 20g, 24g and 18g respectively.  
The ratio of the number of packets of spice A, B, C and D used was 3 : 2 : 1 : 5.  
The total mass of the spices used was 916g.  
How many packets of spices were used altogether?

5. Alice had some 20-cent and \$1 coins with a total value of \$55.40.  
If there are 29 more \$1-coins than 20-cent coins,
- (a) how many coins does he have altogether?
  - (b) what is the total value of the 20-cent coins?

6. A stationary shop owner spent \$1050 on some exercise books and files. The total amount spent on the files was \$450 more than the amount spent on the exercise books. He bought 0.6 times as many exercise books as he did files. Each exercise books costs \$0.40 less than each file.
- a) Find the total number of exercise books and files the owner bought.
  - b) Find the cost of each file