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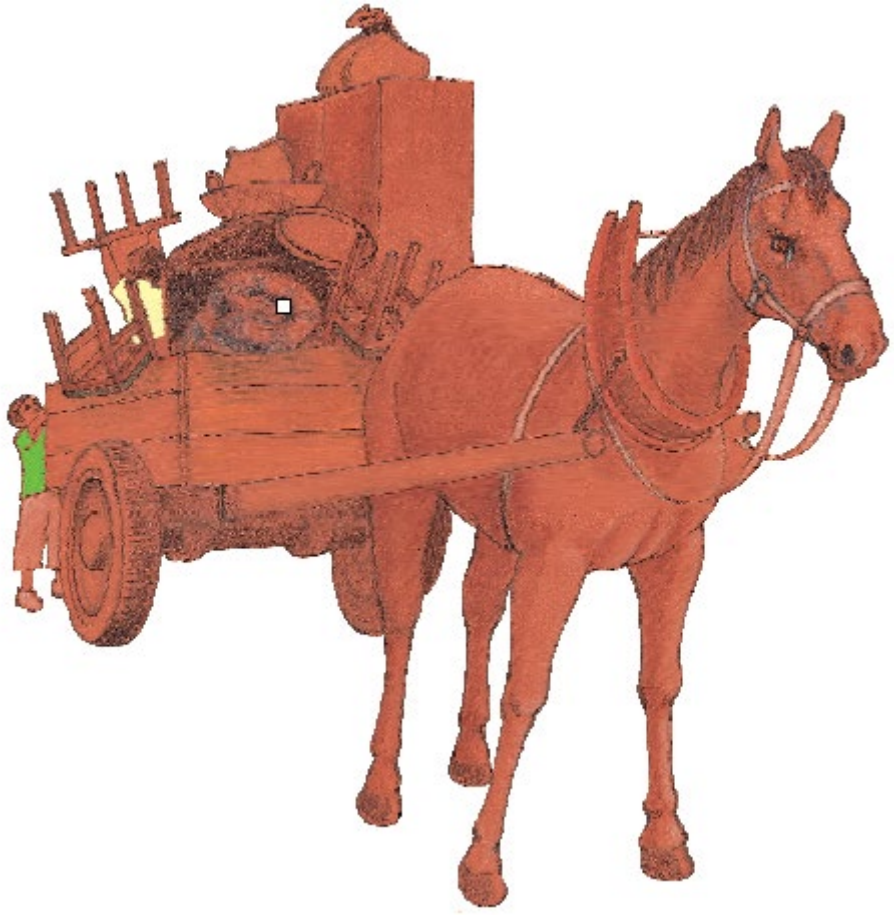

Jaiju and Mannu were shifting the house. They loaded all their things on a horse-cart. There were many things, like – a water tank, five sacks of wheat, three tables, an almirah, four chairs, two mattresses, three sacks of rice, a bamboo ladder, pots and pans.

Father gave them some idea of the weight of each thing.

Thing loaded	Weight
A sack of wheat	100 kg
A sack of rice	35 kg
Water tank	50 kg
Almirah	70 kg
A table	10 kg
A chair	5 kg
A mattress	20 kg
Bamboo ladder	10 kg
Pots and pans	10 kg

Question: 1

Find out the total weight they had loaded on the cart.

Answer: Weights of all the things

Things loaded	Weight	Number of items	Their total weights
A sack of wheat	100 kg	5	5 × 100 = 500 kg
A sack of rice	35 kg	3	3 × 35 = 105 kg
Water tank	50 kg	1	1 × 50 = 50 kg
Almirah	70 kg	1	1 × 70 = 70 kg
A table	10 kg	3	3 × 10 = 30 kg
A chair	5 kg	4	4 × 5 = 20 kg

A mattress	20 kg	2	2 × 20 = 40 kg
Bamboo ladder	10 kg	1	1 × 10 = 10 kg
Pots and pans	10 kg		10 kg

Total weight of all the things loaded = 500 + 105 + 50 + 70 + 30 + 20 + 40 + 10 + 10

= 835 kg

Therefore, the total weight they had loaded on the cart was 835 kg.

Question: 2

Which things should be removed so that the weight of the load is not more than 700 kg?

Answer: The weight that should be removed to make the weight equal to 700 kg

= 835 – 700

= 135 kg

From the table,

The weight of 3 sacks of rice = 105 kg

The weight of 3 tables = 30 kg

Total weight of both of these two things = 105 + 30

= 135 kg

Therefore, to make the weight equal to 700 kg, they should remove 3 sacks of rice and 3 tables.

Question: 3

Now, you also make your own balance. Write down how you made it. Also, draw a picture of your balance in the box below.

Answer: Do it yourself.

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Question: 4

Activity

Mannu and Jaiju put a pencil and a geometry box in the two pans of the balance. Which pan will go down? Why? Draw a picture to show it.

Answer: We know that the geometry box is heavier than the pencil. Hence, the pan that has a geometry box will go down.

What is heavier?

Question: 5

Make pairs of different things and use the balance to decide which is heavier. First, guess which thing will take the pan down and then check your balance.

Answer: Following are the pairs of different things:

(a) Pen and book

A book is heavier than a pen. So, the pan that has the book will go down.

(b) Glass and spoon

Glass is heavier than a spoon. Hence, the pan that has the glass will go down.

(c) Toothbrush and toothpaste

Toothpaste is heavier than a toothbrush. Therefore, the pan that has the toothpaste will go down.

(d) Socks and trouser

A trouser is heavier than socks. Hence, the pan that has the trouser will go down.

What is the heaviest?

Question: 6

(a) Make groups of three things. For example – eraser, ball and paper. Use the balance to arrange them in order of weight – the lightest, the one with in-between weight, and the heaviest. Complete the table with at least five examples.

Lightest	*In-between weight*	*Heaviest*
Paper	Eraser	Ball

Answer:

Lightest	*In-between weight*	*Heaviest*
Paper	Eraser	Ball
Orange	Coconut	Pumpkin
Pen	Notebook	Dictionary
Glass	Jug	Bucket
Handkerchief	Scarf	Shawl

(b) Can you find your own weight using this balance?

Answer: No, we cannot find our own weight.

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Making Weights

Question: 7

Get a new cake of soap. The packet will have the weight written on it. You can use this soap to make your own different weights.

The soap weighs _____ grams (g)

Answer: The soap weighs 100 grams.

Question: 8

Take a small plastic packet. Put it in one pan of the balance. Put the soap in the other pan. Slowly add sand to the packet till the pans are balanced.

Close the packet with a rubber band or string. Now stick a strip of paper; how many grams will both these weigh?

Answer: It is written 100 gm on the packet.

Question: 9

If you put the soap and the weight you just made together in a pan, how many grams will both these weigh?

Answer: Both weigh 100 + 100 = 200 gm

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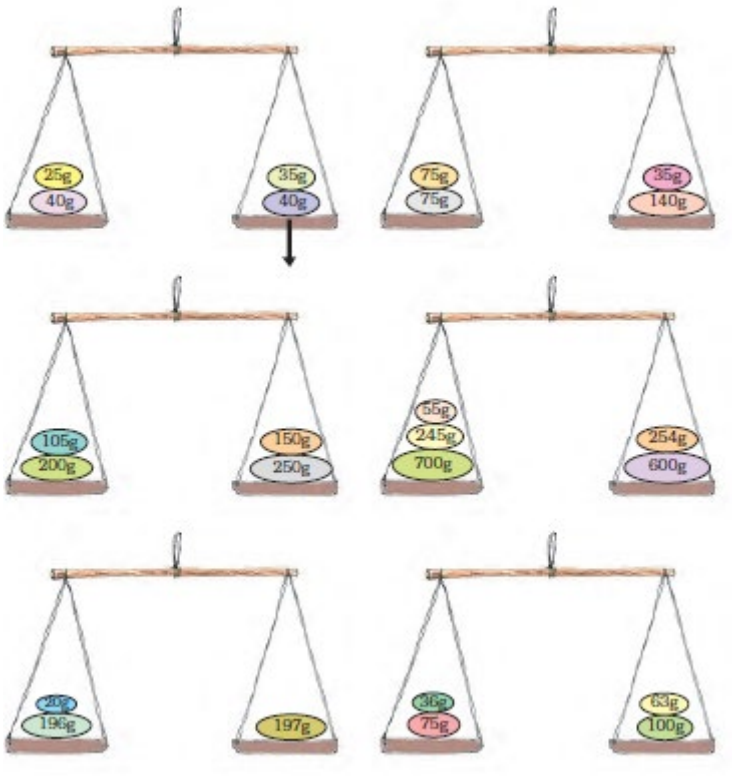
Practice Time

Question: 10

(a) Which pan of the balance will go down? Show by drawing an arrow.



Answer: Do it yourself.

(b) Is the weight on any of the pans equal to 1 kilogram? Mark it.

Answer: The left pan of the fourth figure weighs 1000 gm. The pan includes weights measuring 55 g, 245 g and 700 g, i.e.,

55 + 245 + 700 = 1000 g

= 1 kg

Therefore, the left pan of the fourth figure is equal to 1 kilogram.

(c) How many grams are there in 1 kg?

Answer: We know

1 kg = 1000 g

Hence, there are 1000 grams in 1 kilogram.

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Question: 11

Name 5 things that we usually buy.

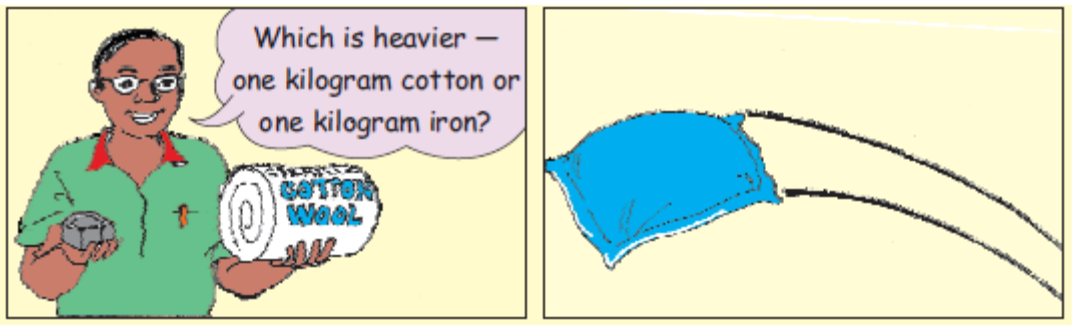
In grams	In kilograms
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Answer:

In grams	In kilograms
Turmeric powder	Tomatoes
Mustard seeds	Sugar
Chilli powder	Wheat
Cardamom	Bananas
Cloves	Rice

Question: 12

Which is Heavier?



Answer: Both have equal weight.

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Dinesan Went Shopping

Dinesan went to a shop and bought some things.

His younger brother cut the end of the bill where the weights were written.

Question: 13

Guess and write the weight of each thing he bought – in g or kg.

Items	*Weight*	
Rice	5	
Sugar	1	
Mustard seeds	10	
Wheat	3	
Dal	500	
Tea	250	
Pepper	25	

Answer: The weights of the given items are as follows:

Items	Weight

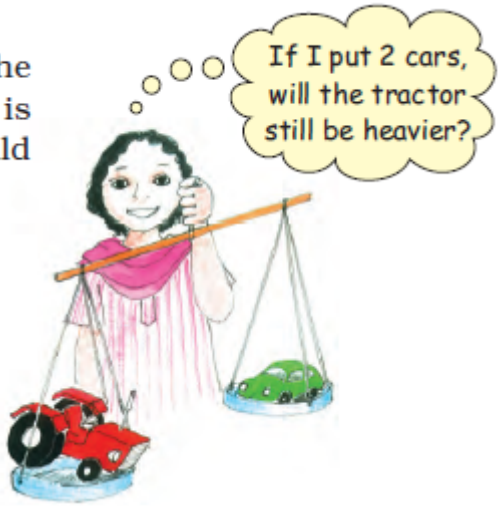
Rice	5 kg
Sugar	1 kg
Mustard seeds	10 g
Wheat	3 kg
Dal	500 g
Tea	250 g
Pepper	25 g

Question: 14

(a)

Car and Tractor

Ritu is weighing her toys. She wants to know if her tractor is heavier than her car. How would you help her to find out quickly?



Answer: This can be done by keeping the tractor and car in each of the pan of the balance separately. By this, we come to know that the toy which goes down is the heavier toy among these two.

(b) Guess which is the heaviest a real car, a bus or a tractor?

Answer: A bus is the heaviest.

(c) Which is the heaviest thing you have seen?

Answer: The heaviest thing I have seen is a rail engine.

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Elephant's Weight

Question: 15

Now imagine what happened next and complete the story. Discuss with your friends how Vaidika's daughter found the weight of the elephant.

Answer: First, Vaidika's daughter marked how much the boat sank in the river. She then asked them to bring the elephant into the boat. Now, the boat sank deeper, and she marked the new water level on the boat. She requested the king to put the gold on the boat till the water level touches the new raised water level mark when the elephant was on the boat. Now, the king was left with no alternative and had to give the gold equal to the weight of the elephant to Vaidika.

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How Much the Chair Weighs

Question: 16

Anamika wants to weigh this chair using the weighing machine.

Can you suggest a way to do this?

Answer: First, Anamika should put a flat wooden slab on the weighing machine, on which the chair can be kept easily and record its weight. Then she should place the chair on the slab kept on the weighing machine. The difference in the weight of the chair with the wooden slab and the weight of the wooden slab will give the weight of the chair.

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Broken Stones

Abdu sells firewood. There was
stone in his shop which weighe
13 kg. He used it to weigh firewood.

One day the stone fell down an
broke into three pieces whic
weighed – 2 kg, 5 kg and 6 kg.

Question: 17

Now you show how Abdu will use these stone pieces to weigh.

(a) 4 kg of firewood

Answer: By keeping a broken stone of 6 kg on the left pan and a broken stone of 2 kg on the right pan with firewood, he can weigh 4 kg of wood. Their difference, i.e.,

6 – 2 = 4 kg will give the weight of firewood.

(b) 3 kg of firewood

Answer: He can weigh 3 kg of firewood by keeping the broken stone of 5 kg on the left pan and the broken stone of 2 kg on the right pan with firewood. The difference in weight, i.e., 5 – 2 = 3 kg, will balance the two pans of balance by firewood.

(c) 7 kg of firewood

Answer: He can weigh 7 kg of firewood by keeping the broken stone of 5 kg and 2 kg on the left pan and firewood on the right pan.

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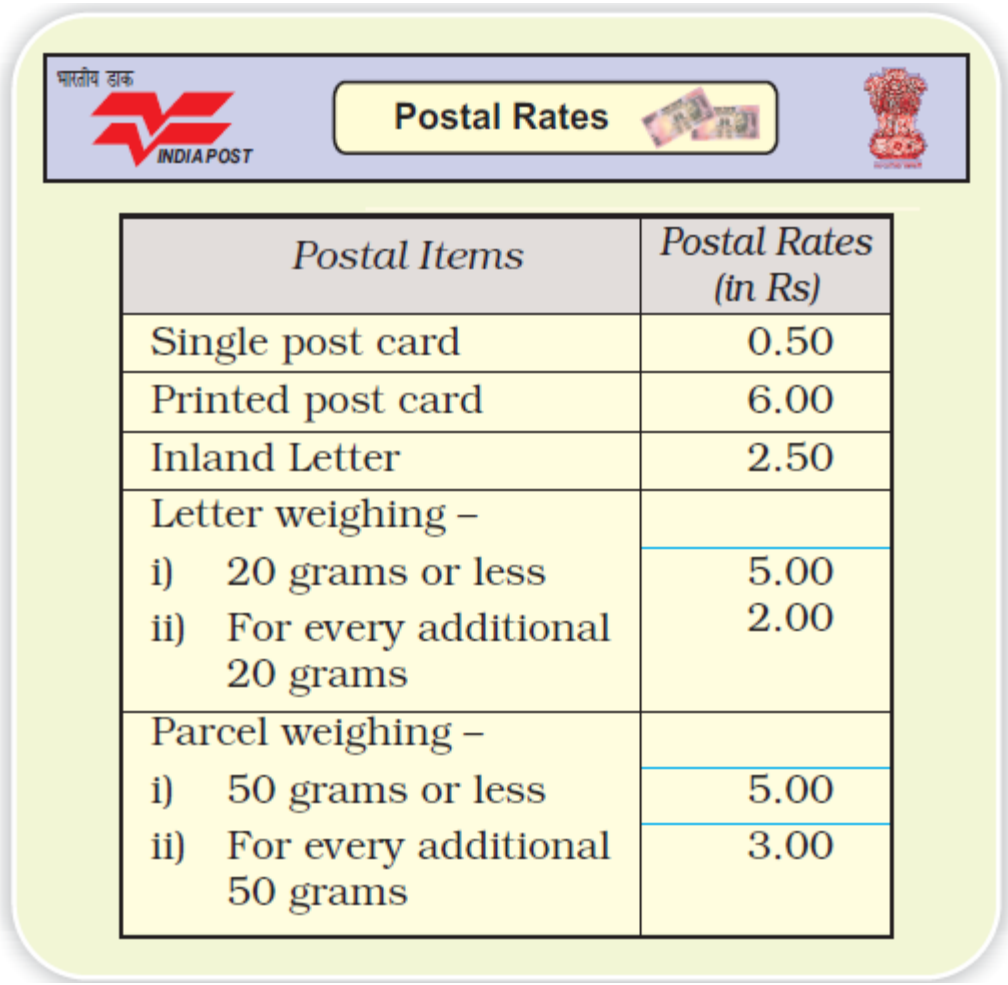
Post Office



Postal Items	*Postal Rates (in Rs)*
Single post card	0.50
Printed post card	6.00
Inland Letter	2.50
Letter weighing –	
i) 20 grams or less	5.00
ii) For every additional 20 grams	2.00
Parcel weighing –	
i) 50 grams or less	5.00
ii) For every additional 50 grams	3.00

Question: 18

Have you ever been to a post office?

Answer: Yes.

Question: 19

What different things do people go there for?

Answer: People go to the post office for the following reasons:

(i) To post the letters

(ii) To send money orders

(iii) For banking

(iv) To purchase postcards, inland envelop, stamps, etc.

Question: 20

How much does a postcard cost?

Answer: The cost of the postcard is Rs 0.50.

Question: 21

How much does an inland letter cost?

Answer: The cost of the inland letter is Rs 2.50.

Look at the postal rates given in the chart.

Question: 22

How much will you have to pay for stamps on a letter weighing 50 grams?

Answer: The stamps are required upto 20 grams = Rs 5.00

For next 20 grams = Rs 2.00

For next 10 grams = Rs 2.00

Total cost of stamps = Rs 5.00 + Rs 2.00 + Rs 2.00

= Rs 9.00

Therefore, I have to pay Rs 9.00 for stamps on a letter weighing 50 grams.

Question: 23

Akash wants to send a parcel of the Math Magic textbook to his friend Rani in Chennai. The book weighs 200 g. See the chart to find the cost of posting the book.

Answer: Akash has to parcel the book to send it to Rani. Following are the costs he has to pay for the parcel:

The weight of the book = 200 grams

The cost of a parcel upto 50 grams = Rs 5.00

The cost of additional 150 grams = Rs 3.00 × 3

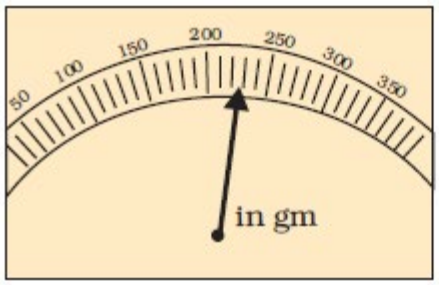
= Rs 9.00

Total cost = Rs 5.00 + Rs 9.00

= Rs 14

Question: 24

Read the weight shown in the picture. Find out the cost of sending a parcel of that weight.



Answer: The weight of the parcel on the weighing machine = 225 gram

Postal charges for 50 grams = Rs 5.00

For additional 50 grams = Rs 3.00

For next 50 grams = Rs 3.00

For next 50 grams = Rs 3.00

For next 50 grams = Rs 3.00

Total postal charges = Rs 5.00 + Rs 3.00 + Rs 3.00 + Rs 3.00 + Rs 3.00 = Rs 17.00

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How Many Stamps?

Question: 25

Rahul needs stamps of Rupees 25 for his parcel. He went to the post office. Only stamps of Rs 1, Rs 2, Rs 5 and Rs 10 were there at that time. Using those stamps, in how many different ways can he make Rs 25?

Answer: By using available stamps, he can make Rs 25 in the following ways:

(a) Rs 1 × Rs 25 = Rs 25

(b) Rs 2 × Rs 12 + Rs 1 = Rs 24 + Rs 1

= Rs 25

(c) Rs 5 × Rs 5 = Rs 25

(d) Rs 10 × Rs 2 + Rs 5 = Rs 20 + Rs 5

= Rs 25

(e) Rs 10 + Rs 5 × Rs 3 = Rs 10 + Rs 15

= Rs 25

Our Weight Together

A frog was struggling to escape from the mouth of a crow. How can I escape? — the frog thought. Suddenly a trick came to his mind. He asked the crow — Are you good at arithmetic? If yes, then I will ask you a problem.

Your weight is 650 g and I am only 145 g. How much do we weigh together?

The crow was good at mathematics, so he happily opened his beak to answer.

Question: 26

What happened after that? So what was the answer the crow wanted to give?

Answer: As the crow opened its mouth to answer the frog's question, the frog escaped from his mouth. Crow gave the answer as follows: We weigh 795 gm together.

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Am I Fit or Fat?

The chart shows the height and weight of children between 6 and 10 years old.

Name	*Age*	*Height*	*Weight*
Temshula	6	3 feet, 7 inches	16 kg
Sreekunth	10	4 feet, 3 inches	23 kg
Rabiya	6	3 feet, 10 inches	17 kg
Vineet	8	3 feet, 11 inches	19.5 kg
Kavita	9	3 feet, 10 inches	20 kg

Question: 27

Now, you also fill the table by finding out the age, height and weight of any five friends.

Answer: Some of my friends' name, age, height and weight are as follows:

Name	Age	Height	Weight
Kavita	7	4 feet 4 inches	24 kg
Shreya	6	4 feet 2 inches	20 kg
Anjali	10	5 feet 2 inches	30 kg
Nikita	9	5 feet 1 inch	25 kg
Rashmi	8	4 feet 9 inches	22 kg

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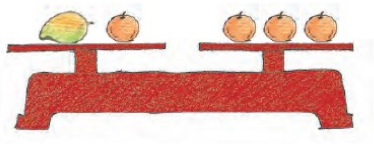
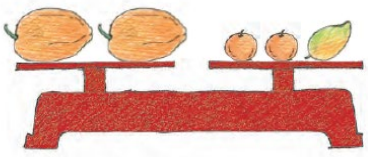
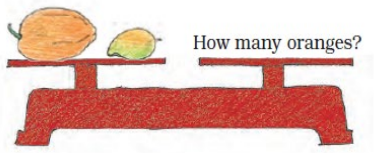
How Many Oranges?







Question: 28

All oranges have equal weight. The two papayas have the same weight. The weights in the first and second balances are equal.

How many oranges balance the weight in the third?

Answer: In the first balance,

1 Mango + 1 Orange = 3 Oranges

1 Mango = 3 Oranges – 1 Orange

1 Mango = 2 Oranges

Hence, 1 Mango = 2 Oranges

In the second balance,

2 Papaya = 2 Oranges + 1 Mango

2 Papaya = 2 Oranges + 2 Oranges [1 Mango = 2 Oranges]

2 Papaya = 4 Oranges

Hence, 1 Papaya = 2 Oranges

In the third balance,

1 Papaya + 1 Mango = 2 Oranges + 2 Oranges [1 Papaya = 2 Oranges and 1 Mango = 2 Oranges]

1 Papaya + 1 Mango = 4 Oranges

Therefore, in the third balance, 4 Oranges will balance 1 Papaya and 1 Mango together.

Find That Marble

Question: 29

There are 3 marbles of the same size, but one marble is slightly heavier or lighter than the other two. Can you find which is that marble and if it is heavier or lighter? You can use a balance only two times.

Answer: Let us take the three marbles as M_1, M_2 and M_3 in which one of them is heavier or lighter than the other two.

Put marbles M_1 and M_2 in different pans.

First case: If both are equal, then M_3 is heavier or lighter than these marbles.

Second case: Put M_1 and M_3 in different pans

(a) If they are equal, then M_2 is heavier or lighter.

(b) $M_1 < M_3$ then $M_2 = M_3$ and M_1 will be lighter than M_1 and M_3.