CBSE Class 5 Mathematics

NCERT Solutions

CHAPTER-4

PARTS AND WHOLES

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1. A) Chocolate bar

Manju had a chocolate. She gave one-fourth of it to Raji, one-third to Sugatha and one-sixth to Sheela. She ate the remaining part.

How many pieces of chocolate did each get? Write here.

What part of the chocolate did Manju eat?

Ans. Total number of pieces=12

Raji's share= $\frac{1}{4}$ of 12 = $\frac{1}{4} \times 12 = 3$

Sugatha's share= $\frac{1}{3}$ of 12 = $\frac{1}{3} \times 12 = 4$

Sheela's share= $\frac{1}{6}$ of 12 $= \frac{1}{6} \times 12 = 2$
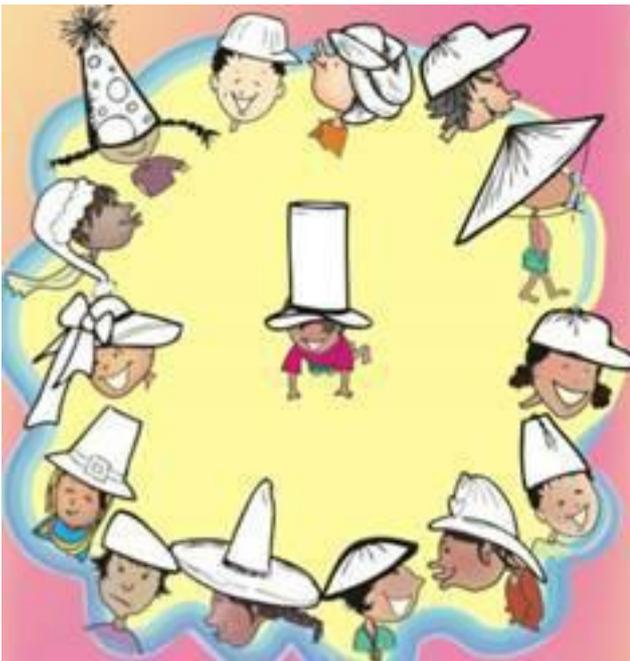
And, Manju's share=12-3-4-2

=12-9=3= $\frac{12}{4}$

So, Manju ate one-fourth of the chocolate.

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2. Colour the hats

colour one third of the hats red. Colour three-fifth hats blue. How many hats did you colour red? How many hats did you colour blue? What part of the hats are not coloured?

Ans. Total number of hats=15

$\frac{1}{3}$ of the hats= $\frac{1}{3}$ of 15 = $\frac{1}{3} \times 15 = 5$

$\frac{3}{5}$ of the hats = $\frac{3}{5}$ of 15 = $\frac{3}{5} \times 15 = 9$

Five hats were coloured red.

Nine hats were coloured blue.

Number of hats left uncoloured=15-5-9=1

Thus, $\dfrac{1}{15}$ of the hats are not coloured.

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3. Equal part of a triangle

(a) The white triangle is divide into three equal parts. Fill each one-third part with a different colour.


Can you show that these parts are equal? Think how?

Ans. (a) Since, one triangle is divided into three equal parts, therefore, each part is one-third $\left(\dfrac{1}{3}\right)$ of the whole triangle. Let us $\dfrac{1}{3}$ in each part and colour them in different colour as shown in the above figure.
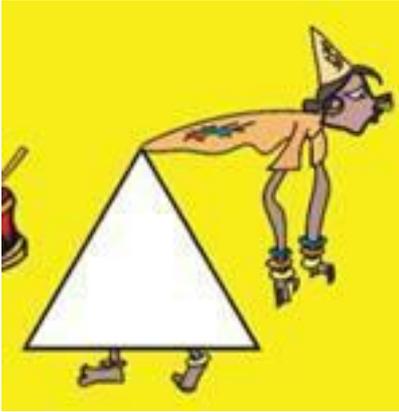
In order to show that these parts are equal. Let us name them, as T_1, T_2 and T_3. Trace any of them, say T_1. Now place traced part over T_2 and T_3.We find that T_1 cover T_1, and T_3 are of the same shape and size. Hence, these triangles are equal.
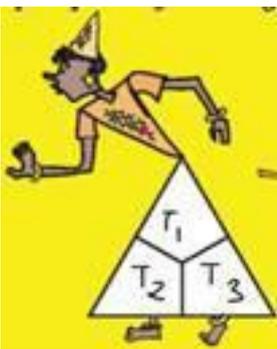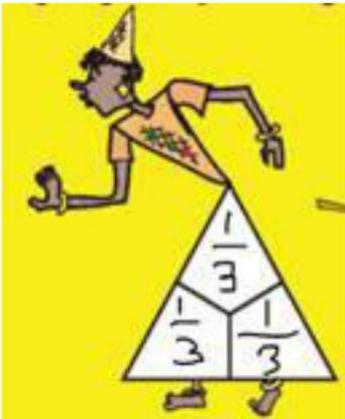

(b) Now try to make three parts of the triangle in a different way. Colour each one-third

with a different colour.

Ans. (b) The given triangle is divided into three equal parts of showing the adjoining figure.

Its each one-third part is coloured differently.

4. How will you check that each part is really one-sixth of that rectangle?

Ans. Trace a rectangle equal to any one of the six parts of one of the figure. Put the trace out rectangle on the remaining parts one by one. It overlaps completely. This shown that each all part is one sixth of the given rectangle. In the same, we can find out in case of the other figure.

5. The green rectangle is bigger than the blue one.

Can we say that $\dfrac{1}{6}$ **of the green rectangle is bigger than** $\dfrac{1}{6}$ **of the blue rectangle.**
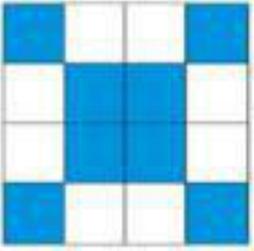
Ans. Yes, we can say that $\dfrac{1}{6}$ of the green rectangle is bigger than $\dfrac{1}{6}$ of the blue rectangle.

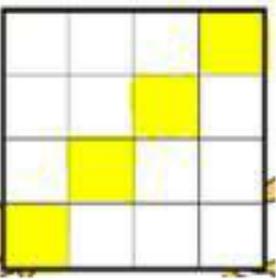## 6. Patterns in Parts

Make different patterns by colouring some squares in the grids A, B, C, D. What part of the grid did you colour? What part of the grid remained white? Write.

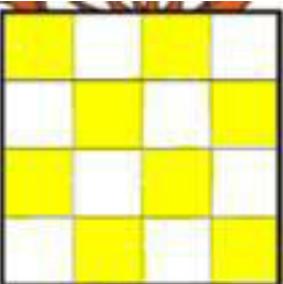**(A)**

Ans.(a) $\dfrac{8}{16}$ blue, $\dfrac{8}{16}$ white.

(B)

Ans. (b) $\dfrac{4}{16}$ is black, $\dfrac{12}{16}$ white.

(C)

Ans.(c) $\dfrac{8}{16}$ black, $\dfrac{8}{16}$ white

(D)
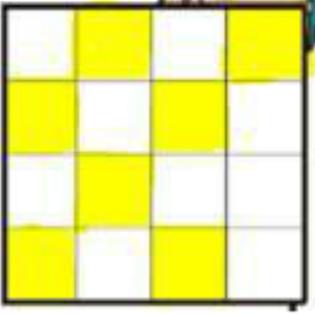
Ans. (d) $\dfrac{7}{16}$ black, $\dfrac{9}{16}$ white.

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7. Look at grid A again. Is the grid coloured:

(a) $\dfrac{1}{2}$ blue, $\dfrac{1}{2}$ white?

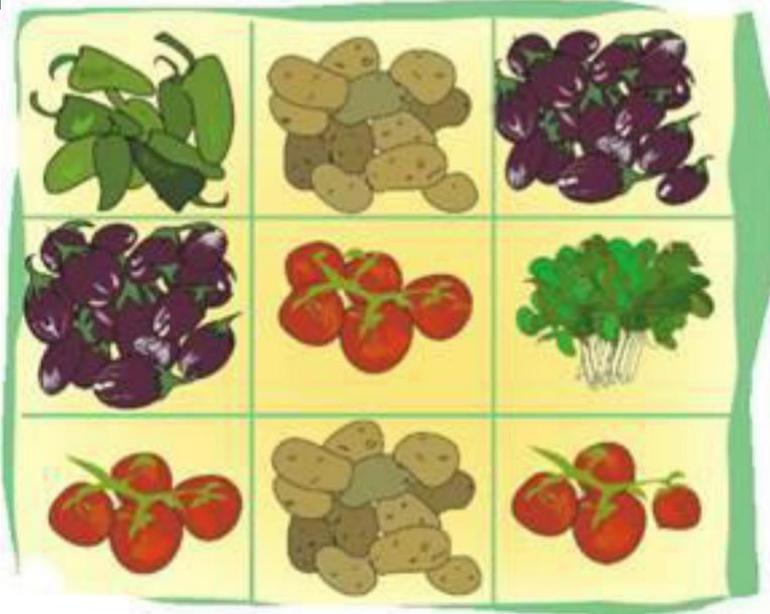(b) $\dfrac{2}{4}$ blue, $\dfrac{2}{4}$ white?

(c) $\dfrac{3}{8}$ blue, $\dfrac{5}{8}$ white?

(d) $\dfrac{4}{8}$ blue, $\dfrac{4}{8}$ white?

Mark (X) on the wrong answer.

Ans. (c) is the wrong answer.

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8. Ramu's Vegetable Field Ramu's vegetable field has 9 equal parts. What vegetables does he grow?

(1) Which vegetable grows in the biggest part of the field? What part?

(2) On what part of the field does he grow potatoes?

(3) What parts of the field is used to grow spinach? What part is used for brinjals?

Ans. Ramu grows chillies, potatoes, brinjals, tomatoes and spinach.

(1) Tomatoes grows in the biggest part of his field. It grows in one-third part of the field.

(2) He grows potatoes on $\frac{2}{9}$ part of the field.

(3) $\frac{1}{9}$ part of field is used to grow spinach. $\frac{2}{9}$ part of the field is used for brinjals.

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9. Ramu wanted to give these vegetables to his friends. He gave Aboobacker one-fifth of these tomatoes and of the $\frac{1}{3}$ potatoes. Srija got of the tomatoes $\frac{2}{5}$ and of the $\frac{3}{6}$ potatoes. Nancy got the rest of these vegetables. Circle Aboobacker's share in blue. Circle Srija's share in yellow.

Q. How many potatoes and tomatoes did Nanacy get?

Ans. A boobacker's share is encircled in blue colour (double line) and that the Srija in yellow

(single line) as

Nancy got 3 potatoes and 8 tomatoes.

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10. Game: Who colours the Circle Fast?

This game is to be played in groups of 4. Each player has to make a circle as shown.

Each one has to make 15 tokens on slips on paper.

Write $\dfrac{1}{2}, \dfrac{1}{3}, \dfrac{1}{4}, \dfrac{1}{6}, \dfrac{1}{12}, \dfrac{2}{12}, \dfrac{3}{12}, \dfrac{4}{12}, \cdots \dfrac{11}{12}$ **to make your tokens.**

Shuffle, the tokens and make a pile in the middle of the group. Now you are ready to start the game.

The first player takes a token from the pile, colours that part of the picture, and puts the token under the pile. The next player does the same, and so on. The winner is the one who first colours the circle completely. Who won the game?

What are the winner's tokens?

Write the tokens you got.

What part of the circle did you colour?
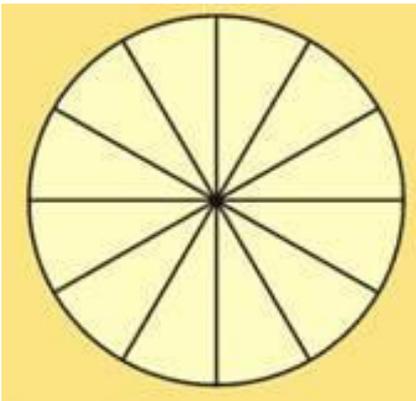
Ans. Each of the 4 players should make a circle as shown. Each one of them should make 15

tokens on slips of paper and write $\dfrac{1}{2}, \dfrac{1}{3}, \dfrac{1}{4}, \dfrac{1}{6}, \dfrac{1}{12}, \dfrac{2}{12}, \dfrac{3}{12}, \dfrac{4}{12}, \cdots \dfrac{11}{12}$ to make the above

and tokens. Let us play the game as directed.

I won the game.

The winner's tokens are $\frac{1}{2}$ and $\frac{6}{12}$.

I got tokens bearing numbers $\frac{1}{2}$ and $\frac{6}{12}$.

I coloured the circle completely.

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11. Cutting the halwa

Ramesh bought a piece of halwa for his children Ammu and Anu. He divided it equally for them.

(a) Each will get $\frac{1}{2}$ part of halwa.

Ans. This piece is too big. We can't eat it. They said. So, he divided the piece into half again. Now, many pieces will Ammu get? 2 pieces.

(b) What part of the halwa is it? $\frac{2}{4}$

Ans. Make it even smaller Dad.... they asked. So, he again cut the halwa into smaller pieces. Ok, thank you, Dad.

(c)Now how many pieces will each get?

Ans. Now each of them will get 4 pieces.

(d)What part of the halwa is each piece now?

Ans. Each piece now is $\frac{1}{8}$ of the halwa.

(e) If Ramesh had cut the halwa into 6 equal parts how many pieces would each have got? Look at your answers for questions 1 to 4 and write:

$\frac{1}{2}$ = ...=.....=.....=......=.....

Ans. If Ramesh had cut the halwa into 6 equal parts, then each would get 3 pieces.

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$$

12. Rupees and Paise

(a) How many 50 **will make one rupee?**

Ans. Two 50-paise will make one rupee.

(b) Is 50 paise half of one rupee?

Ans. Yes, 50 paise is half of one rupee.

(c) How many 25 **will make one rupee?**

Ans. Four 25-paise will make one rupee.

25 paise is $\frac{1}{4}$ part of one rupee.

20 paise is $\frac{1}{5}$ part of one rupee.

(d) How many 10-paise will make one rupee?

Ans. Ten 10-paise will make one rupee.

13. School Magazine

A School has decided to bring out a magazine every quarter of the year. How many magazines will they have in a year? If they want to print it at the end of each quarter of a year, which are the months for printing? Mark the number for those months.

Ans. Every quarter of the year means every $\frac{1}{4}$ of the year. It is exhibited on the strip as under:

They will have four magazines in a year.

In order to print the magazine at the end of each quarter of the year, they should print it in the months of March, June, September and December. These months are encircled on the strip.

14. Sleeping Beauty!

Have you heard of Kumbhakarna, the brother of Ravana? He is famous for sleeping for half a year.
Most people sleep about 8 hours a day. Then what part of a day is it?
So what part of a year do they sleep? A person 60 years old must have slept ….years.

Ans. Yes, I have heard of Kumbhakarna, the brother of Ravana.

Most of the people sleeps for one-third of a day.

Because one-third of 60 years

$= \left(\frac{1}{3} \times 60\right)$ years= 20 years.

Therefore, a person of 60 years old must have slept 20 years.

15. Keerti's Shopping List

Look at the yellow price list.

(a) How much does 2kg of tomato cost?

(b) How much does $\frac{1}{2}$ kg of tomato cost?

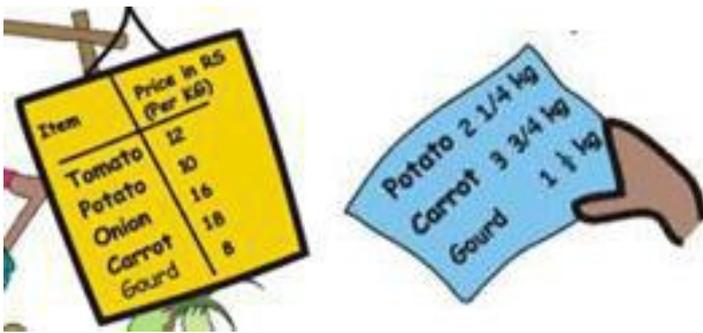**(c) Kiran wants** $2\frac{1}{2}$ **kg of tomato. How much will it cost?**

(d) How much does $3\frac{1}{2}$ **kg of potato cost?**

(e) What is the price of $1\frac{1}{4}$ **kg of carrot?**

(f) He bought a gourd of weight $4\frac{3}{4}$ **kg and it costs……**

(g) Look at the shopping list in Keerti's hand. How much will she have to pay to buy all the these?

(h)Make a bill of your own for vegetables you want to buy. Find the total money you will have to pay.

Ans.(a) 2kg of tomato costs = Rs. 12 $\times$ 2 = Rs. 24

(b) $\frac{1}{2}$ kg of tomato costs = Rs. 12 $\times$ $\frac{1}{2}$ =Rs. 6

(c) Cost of $2\frac{1}{2}$ kg of tomato

= Cost of 2kg of tomatoes +Cost of $\frac{1}{2}$ kg of tomato

= Rs. 12 $\times$ 2+Rs. 12 $\times$ $\frac{1}{2}$ =Rs. 24 +Rs.6 = Rs. 30

(d) Cost of $3\frac{1}{2}$ kg of potato

= Cost of 3 kg of potato + Cost of $\frac{1}{2}$ kg of potato

= 10×3 + Rs. $10 \times \frac{1}{2}$ = Rs. 30+ Rs. 5 = Rs. 35

(e) Cost of $1\frac{1}{4}$ kg of carrot

= Cost of 1kg of carrot + Cost of $\frac{1}{4}$ kg of carrot

= Rs. 18 + Rs. $18 \times \frac{1}{4}$ = Rs. 18 + Rs. 4.50 = Rs. 22.50

(f) Cost of $4\frac{3}{4}$ kg of gourd

= Cost of 4 kg of gourd + Cost of $\frac{3}{4}$ of gourd kg

= Rs. 8×4 + Rs. $8 \times \frac{3}{4}$

= Rs. 32 + Rs. 6 = Rs. 38

(g) Keerti's shopping

Item	Price in Rs. (per kg)	Amount (Rs.)
Potato kg	10	$10 \quad 2+ 10$ = 20 + 2.50 = 22.50
Carrot $\left(3\frac{3}{4}\right)$ kg	18	$18 \times 3+18 \times \frac{3}{4}$ = 54+13.5

		=67.5
Gourd kg	8	8 1+8 = 8+4 =12
	Total	**Rs. 102**

(h)Own Shopping

Item	Price in Rs. (per kg)	Amount (Rs.)
Tomato (2 kg)	12	12 2=24
Potato $\left(1\dfrac{1}{2}\right)$ kg	10	$10 \times 1 + 10 \times \dfrac{1}{2}$ =15
Onion (1 kg)	16	16 1= 16
Carrot $\left(\dfrac{1}{2}kg\right)$	18	$18 \times \dfrac{1}{2}$ = 9
	Total	**Rs. 64**

16. Raheem's Journey

(a) Raheem has to travel $1\dfrac{1}{4}$ km to reach school. What distance does he travel to go to school and come back home?

Ans. The distance travelled by Raheem to go to school and come back

$$= 1\frac{1}{4} \text{ km} \times 2 = \frac{5}{4} \text{ km} \times 2 = \frac{5}{2} \text{ km} = 2\frac{1}{2} \text{ km}$$

(b)Lata bought a pencil and a pen for seven and a half rupees. She gave Rs. 10. The

shopkeeper gave back the money in half and quarter rupees. What are the coin she get?

Ans. She might have got either of

(1) One 50-paise coin and eight 25-paise coins.

(2) Two 50-paise coins and six 25-paise coins.

(3) Three 50-paise coins and four 25-paise coins.

(4) Four 50-paise coins and two 25-paise coins.

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17. At the railway station

Your attention please. Mangalore Express coming from Mangalore and going to Thiruvananthapuram is now running late by half an hour.

Oh the train is late today. The right time is a quarter to 7.

(a) What time is the train expected to come today?

Ans. The expected time of the train to come today is quarter past 7.

(b) Nazia gets off at a station after $2\frac{1}{2}$ **hours from this station. What time will she get off?**

Ans. Nazia will get off at quarter to 10.

(c) Shaji will take 5 hours to reach Ernakulam by this train. At what time will he reach there?

Ans. Shaji will reach Ernakulam by this train at a quarter past 12.