

NCERT SOLUTIONS

CLASS - 5th



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Class : 5th
Subject : Maths
Chapter : 4
Chapter Name : Parts And Wholes

Q1 Draw a rectangle of length 8 cm and width 6 cm. Divide it into three equal parts and complete the flag. The top one – third of our flag is saffron (or orange). What is the colour of the middle- one – third of the flag? Where will you draw the Ashoka chakra? How much of the flag will you colour green?

Answer.



The colour of middle one-third of the flag is white. The Ashoka chakra is drawn at the centre of the flag. One-third of the flag is coloured green.

Page : 50 , Block Name : Our Flag

Q2 Now look at this flag. How much of it is black? _____

The green part of the flag can be written as _____

Is red less than one - third of the flag? Why?



Answer. Total number of parts of the flag = 3 Now, we see that out of three equal parts, only one part of the flag is black. Thus, $\frac{1}{3}$ of the flag is black. We can also see that out of three parts of the flag, only one part is green. Thus, green part of the flag is $\frac{1}{3}$ of the flag. The red portion of the flag

is less than 13 of the flag, because a white emblem is also present in the red portion of the flag.

Page : 50 , Block Name : Our Flag

Q3



This is the flag of Myanmar, our neighbour. Is blue more than one-fourth of the flag or less? Guess how much of the flag is red. Is it more than 12? Is it more than three-fourths?

Answer. The blue colour is present in less than one-fourth of the flag. I think, red colour is present in more than three-fourth of the flag.

Page : 50 , Block Name : Our Flag

Q1 Collect as many flags as you can.

Answer. Malaysia



USA



Canada



Kuwait



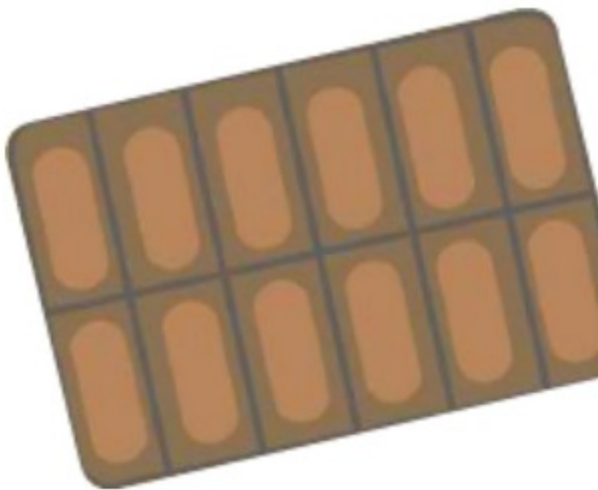
Page : 51 , Block Name : Find out

Q2 How many flags have three colours? Are all the coloured parts equal in these flags?

Answer. The flag of Ghana, Azerbaijan, Malaysia, and Venezuela have three color.

Page : 51 , Block Name : Find out

Q1 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?



What part of the chocolate did Manju eat?

Answer. Total number of pieces in the chocolate bar = 12

Manju gives one-fourth of the chocolate to Raji.

Number of pieces of chocolate given to Raji = $12 \div 4 = 3$ Thus, Raji got 3 pieces of chocolate. Now, Manju gives one-third of the chocolate to Sugatha.

Number of pieces of chocolate given to Sugatha = $12 \div 3 = 4$ Thus, Sugatha got 4 pieces of chocolate. Now, Manju gives one-sixth of the chocolate to Sheela.

Number of pieces of chocolate given to Sheela = $12 \div 6 = 2$ Thus, Sheela got 2 pieces of chocolate. Total number of pieces of chocolate given to Raji, Sugatha and Sheela = $3 + 4 + 2 = 9$ Total number of pieces of chocolate left in the bar = $12 - 9 = 3$ As Manju ate the remaining part of the chocolate, she will get 3 pieces of chocolate. Part of the chocolate eaten by Manju = 14

Page : 52 , Block Name : Practice Time

Q2 Colour the hats Colour 13 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?



Answer.



Total number of hats = 15 It is given that we have to colour 13 of hats in red. Number of red coloured hats = $15 \div 3 = 5$ It is given that we have to colour 35 of the total hats in blue. One-fifth of the total hats = $15 \div 5 = 3$ Number of blue coloured hats = $3 \times 3 = 9$ Number of hats that are not coloured = 1 Thus, part of hats that are not coloured = 115

Page : 53 , Block Name : Practice Time

Q1 Greedy Gatekeepers Remember Birbal, the clever minister of King Akbar? Do you know how he became a minister? Birbal was then a young boy living in a village. He was very clever and could write poetry. He thought he would try his luck in the King's court. So he took some of his poems and set off for the city. When he reached the outer gate of the palace, he was stopped by the gatekeeper. "Hey! Stop there! Where are you going?", shouted the gatekeeper. "I am a poet. I want to see King Akbar and show my poems to him", replied the poet. "Oh, you are a poet! The king is kind, he will surely give you a prize. I will let you in if you give me 110 of your prize".

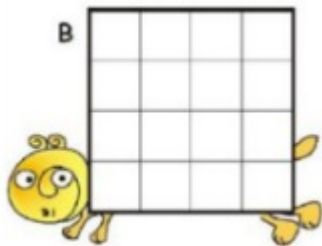
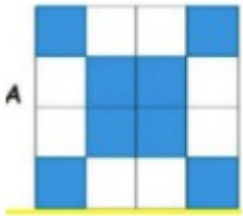
Young Birbal agreed since he had no other way. When he went in, the gatekeeper calculated "If he gets 100 gold coins I will get _____ gold coins". The poet came to a second gatekeeper. This gatekeeper also said, "I will let you in if you give me two-fifth of your prize". The poet agreed. The gatekeeper happily calculated, "The poet will get at least 100 gold coins so I will get _____ gold coins!" The poet reached the last gate. The gatekeeper said, "I will allow you to see the king only if you give me half of the prize that you get". The poet had no other way. He agreed and went inside. The gatekeeper thought, "Today is a great day. If he gets 100 gold coins I will get _____ gold coins. But if he gets 1000 coins - wow! I will get _____". The king was very happy with the poems and said, "Your work is very good. You can ask anything as your prize". "My Lord, I want 100 slaps". "What! 100 slaps? _____". The king was shocked -

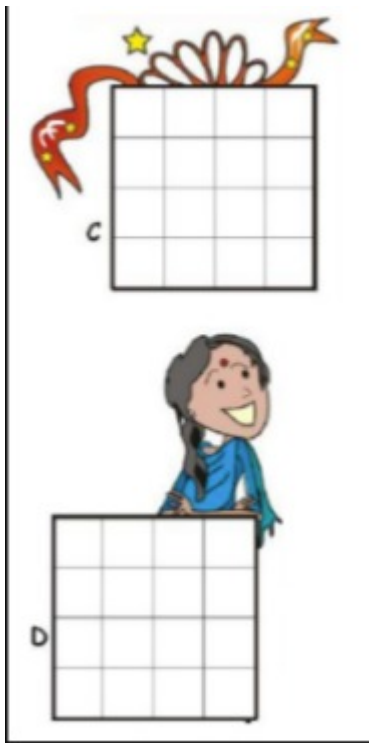
What happened after that? Complete the story. What part of the prize did the poet get?

Answer. The first gatekeeper thought that the king would give 100 gold coins to Birbal as a prize. The first gatekeeper demanded 1/10 of the prize that he would get from the king. So, number of gold coins that would be received by first gatekeeper = $100 \div 10 = 10$ The second gatekeeper demanded 2/5 of the prize that Birbal would receive from the king. One-fifth of 100 = $100 \div 5 = 20$ So, number of gold coins that would be received by second gatekeeper = $20 \times 2 = 40$ The third gatekeeper demanded half of the prize that Birbal would receive from the king. So, number of gold coins that would be received by third gatekeeper = $100 \div 2 = 50$ After listening to his poems, the king became happy. Then, Birbal requested the king to give him 100 slaps as a prize. Hence, the third gatekeeper got 50 slaps, second gatekeeper got 40 slaps, and the first gatekeeper got 10 slaps. The poet got 0 slaps.

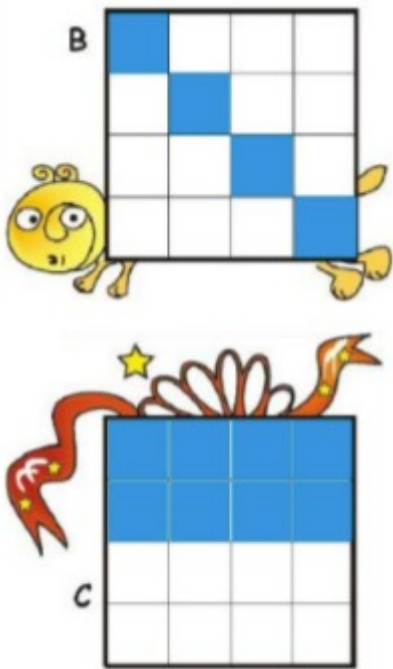
Page : 56 , Block Name : Greedy Gatekeepers

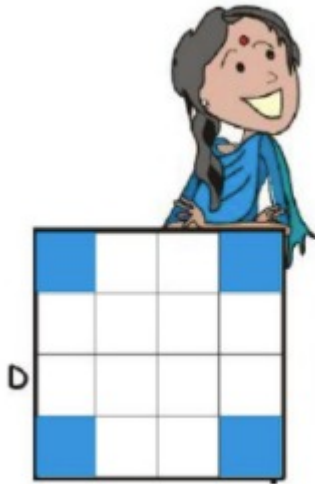
Q1 Make different patterns by colouring some squares in the grids B, C, D. What part of the grid did you colour? What part of the grid remained white? Write.





Answer.





Page : 57 , Block Name : Patterns In Parts

Q2 Look at grid A again. Is the grid coloured.

- (a) 12 blue, 12 white?
- (b) 24 blue, 24 white?
- (c) 38 blue, 58 white?
- (d) 48 blue, 48 white?

Mark (X) on the wrong answer.

Answer. Total number of squares in grid A = 16

Number of squares that are blue-coloured = 8

Number of squares that are white-coloured = 8

Fraction of grid A that is blue-coloured = $\frac{8}{16}$

Fraction of grid A that is white-coloured = $\frac{8}{16}$

So, 8 of the grid A is blue and 8 of the grid A is white.

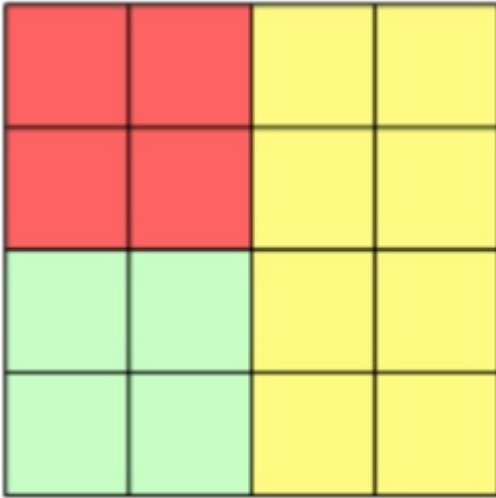
$8 \times 2 = 16$

<p>a)</p> <p>12blue,</p> <p>12white</p>	<p>b)</p> <p>24blue,</p> <p>24white</p>
<p>c)</p> <p>38blue,</p> <p>58white (x)</p>	<p>d)</p> <p>48blue,</p> <p>48white</p>

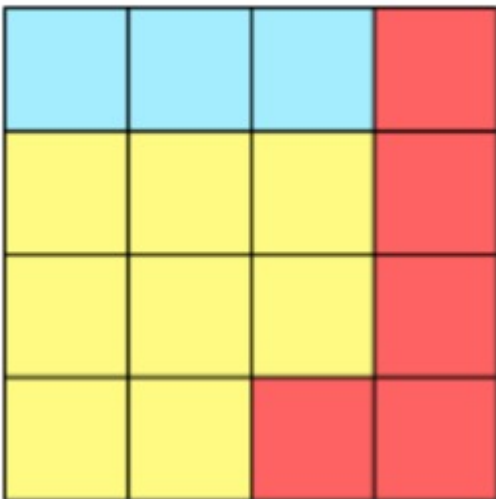
Page : 57 , Block Name : Pattern In Parts

Q3 Draw grids of 16 squares and make patterns with
(a) 28 red, 12 yellow, 14 green (b) 316 blue, 516 red, 12 yellow

(a)



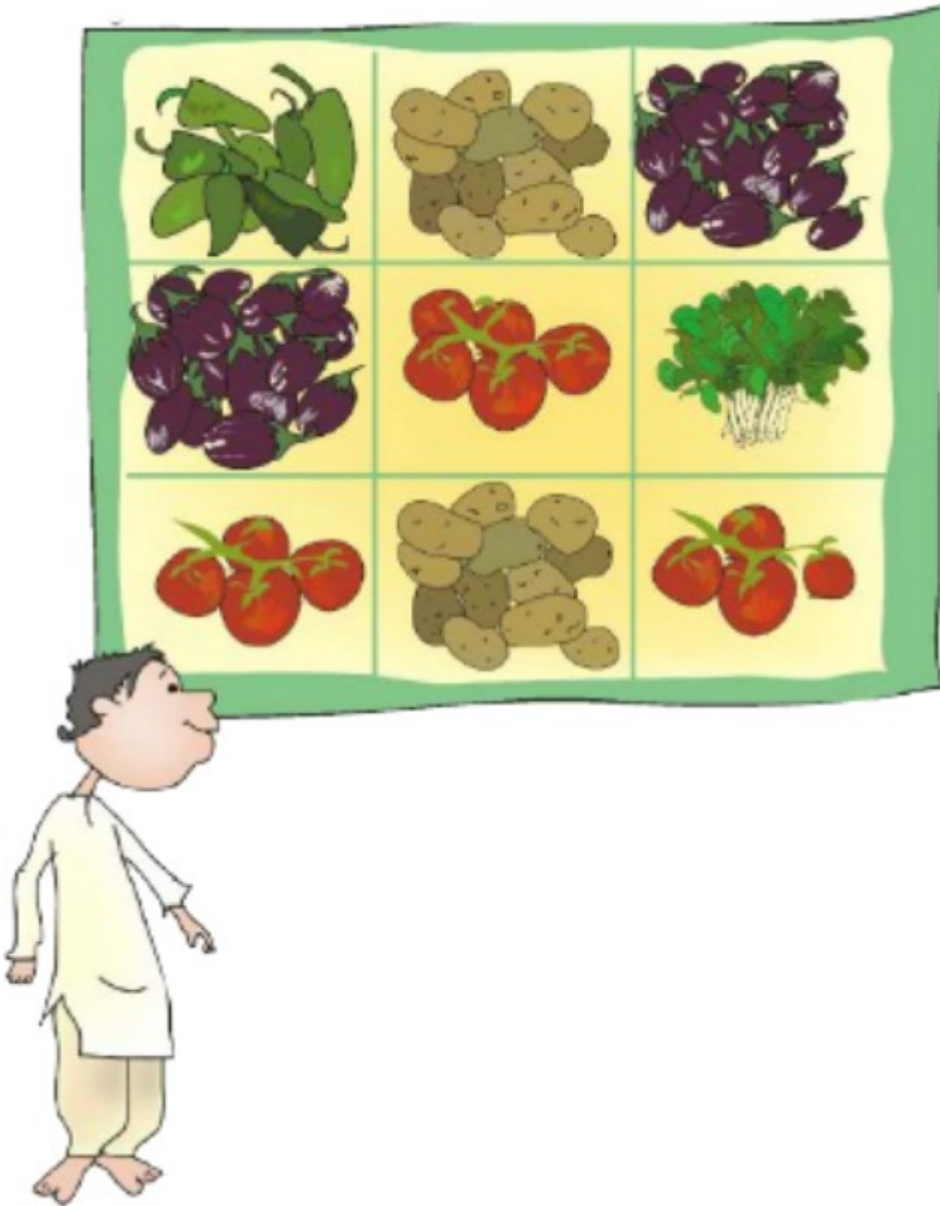
(b)



Answer.

Page : 57 , Block Name : Pattern In Parts

Q1 Ramu's vegetable field has 9 equal parts. What vegetables does he grow?



- (1) Which vegetable grows in the biggest part of his field? What part?
- (2) On what part of the field does he grow potatoes?
- (3) What part of the field is used to grow spinach? What part is used for brinjals?
- (4) Now you write some questions by looking at this picture.

Answer. Ramu grows capsicum, brinjal, tomatoes, spinach and potatoes in his field.

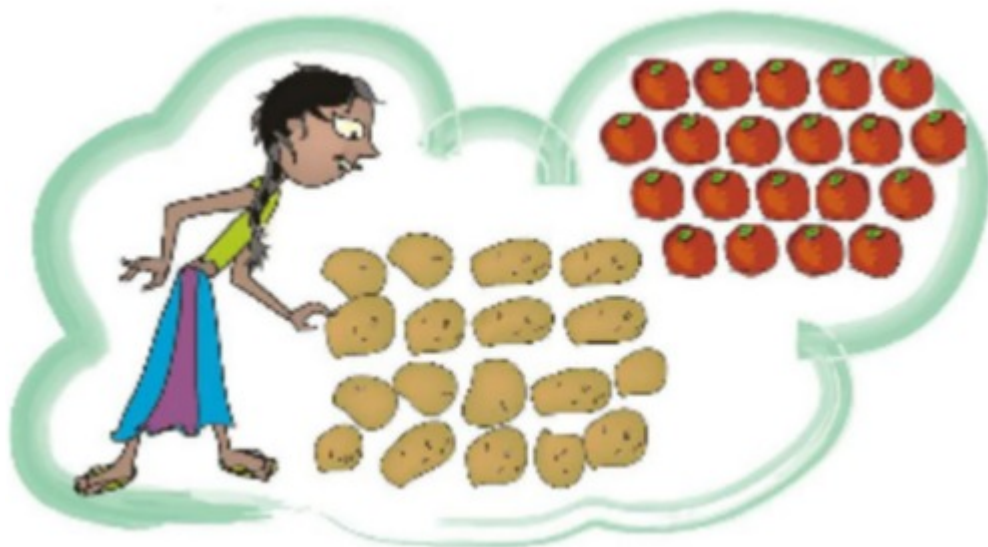
- 1) Total number of parts of the vegetable field= 9 Ramu grows tomatoes in the biggest part of his field. Part of field used for growing tomatoes = 3 Part of field used for growing tomatoes = $\frac{3}{9} = \frac{1}{3}$. Ramu grows tomatoes in one-third of the field.
- 2) Part of field used for growing potatoes = 2 Total number of parts of the vegetable field=9 Part of the field used for growing potatoes = $\frac{2}{9}$ So, Ramu grows potatoes in two-ninth part of the field.
- 3) Total number of parts of the vegetable field = 9 Number of parts used for growing spinach = 1 So, part of the field used for growing spinach = $\frac{1}{9}$ Number of parts of field used for growing brinjals = 2 So, part of the field used for growing brinjals = $\frac{2}{9}$ Thus, Ramu grows spinach and

brinjals in one-ninth and two-ninth part of the field respectively.

4) Missing

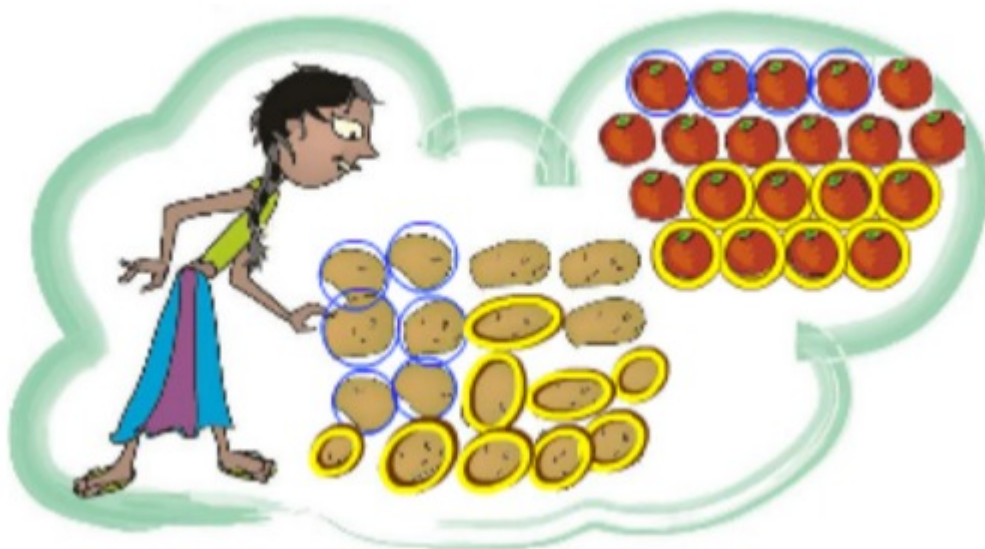
Page : 58 , Block Name : Ramu's Vegetable Field

Q1 Ramu wanted to give below vegetables to his friends. He gave Aboobacker one-fifth of these tomatoes and 13 of the potatoes. Srija got 25 of the tomatoes and 36 of the potatoes. Nancy got the rest of these vegetables. Circle Aboobacker's share in blue. Circle Srija's share in yellow.



How many potatoes and tomatoes did Nancy get?

Answer. Total number of tomatoes = 20 Total number of potatoes = 18 Aboobacker got one-fifth of the tomatoes, and one-third of the potatoes. Number of tomatoes with Aboobacker = $20 \div 5 = 4$ Number of potatoes with Aboobacker = $18 \div 3 = 6$ So, we will circle 4 tomatoes and 6 potatoes in blue to show Aboobacker's share. Srija got two-fifth of the tomatoes and three-sixth of the potatoes. Number of tomatoes with Srija = $2 \times 4 = 8$ One-sixth of 18 = 3 Number of potatoes with Srija = $3 \times 3 = 9$

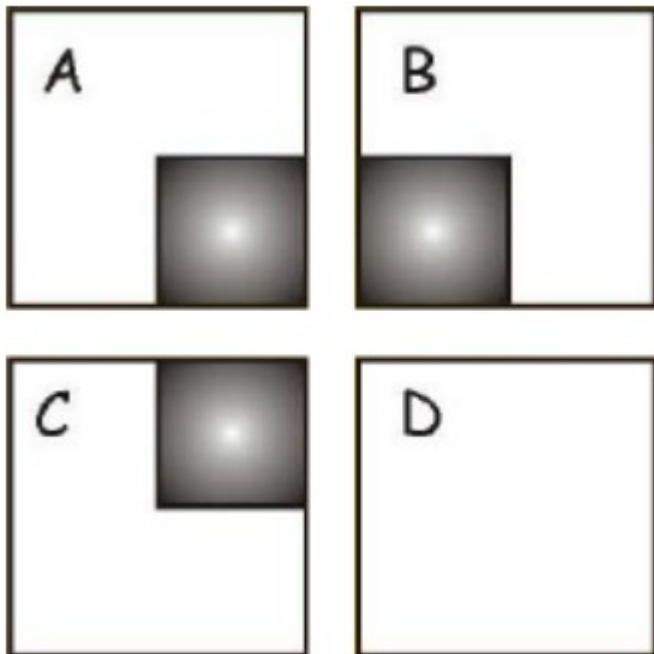


Thus, Ramu gave 4 tomatoes to Aboobacker and 8 tomatoes to Srija. So, he gave a total of 12 tomatoes to Aboobacker and Srija. Now, Ramu gave 6 potatoes to Aboobacker and 9 potatoes to

Srija. So, he gave a total of 15 potatoes to Aboobacker and Srija. Number of tomatoes left = $20 - 12 = 8$ Number of potatoes left = $18 - 15 = 3$ Thus, Nancy got 8 tomatoes and 3 potatoes.

Page : 59 , Block Name : Ramu's Vegetable Field

Q1 The Card Puzzle

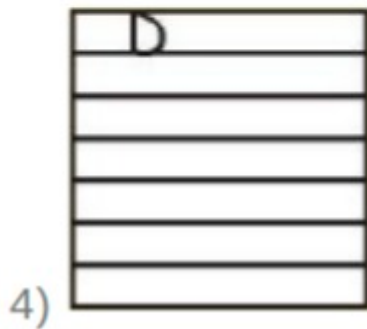
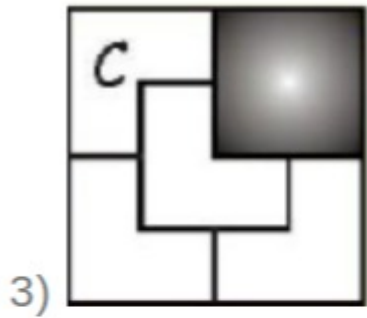
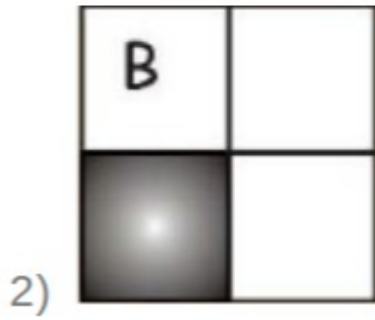
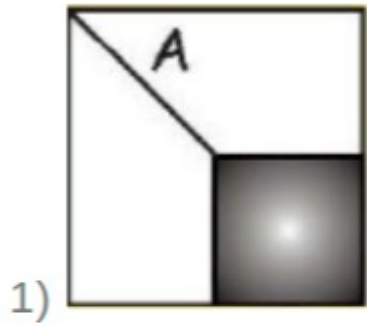


(1) Divide the white area in square A into two equal parts. Got the answer? Was that easy? Now do the second question.

(2) Divide the white area in square B into three equal parts! That too is easy, isn't it? Now see the third question.

(3) Divide the white area in square C into four equal parts!! Is it a bit difficult? Don't worry, take your time. Only if you have given up, look for the answer. Here comes the last question.

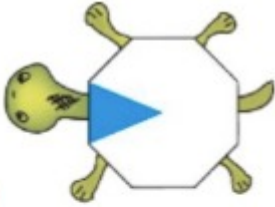
(4) Divide the white area in square D into seven equal parts!!!! The world record for this is 7 seconds. But you can take minutes! Tired of thinking? Look for the answer on page 68. So was that difficult?



Answer.

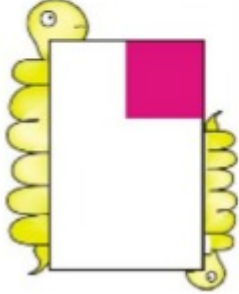
Page : 61 , Block Name : The Card Puzzle

Q1 What part of each shape is coloured? First guess the answer, then check.



(1)

(2)



(3)



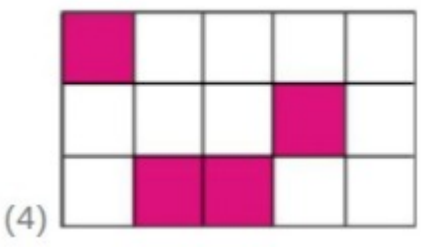
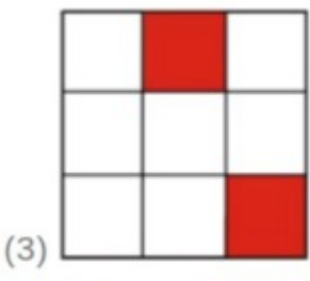
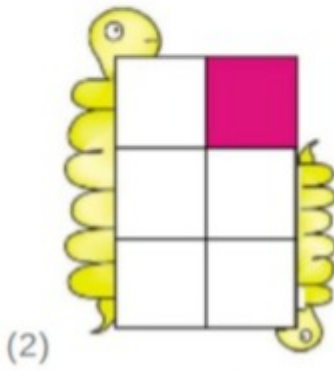
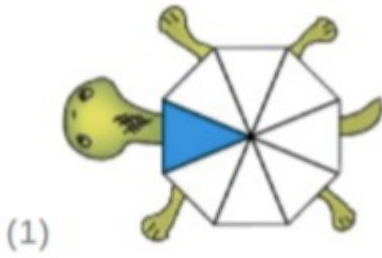
(4)



Answer. Following are the guesses :

- 1) One-eighth of the shape is coloured.
- 2) One-sixth of the shape is coloured.
- 3) Two-ninth of the shape is coloured.
- 4) Four-fifteenth of the shape is coloured.

To cross-check our guess, we will divide each of the given shapes into equal parts of size of the coloured part as shown below :



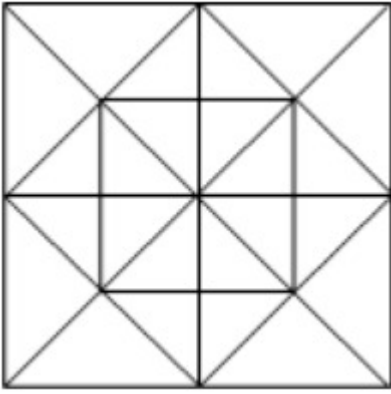
On cross-checking, we now find that our guess is correct.

Page : 61 , Block Name : Guess And Check

Q1 Look at the small triangle. What part of the square is it? How will you find this out?



Answer. We will divide the whole square into small triangles as shown in the adjoining figure.



We will get 16 such triangles.

Total number of triangles = 16

Number of coloured triangles = 1

Fraction of square coloured = $\frac{1}{16}$

Thus, the coloured small triangle is one-sixteenth of the square.

Page : 62 , Block Name : Guess And Check

Q1 Complete these

(1)



This circle is divided into two equal parts. Out of _____ equal parts one part is coloured blue.

(2)



Here the circle is divided into _____ equal parts. Out of _____ equal parts, _____ parts are coloured blue.

(3)



Here the circle is

.....

(4)



Here the circle is

Answer. (1) The circle is divided into two equal parts. Out of two equal parts, one part is blue in colour.

(2) Here, the circle is divided into four equal parts. Out of four equal parts, two parts are blue-coloured.

(3) Here, the circle is divided into six equal parts. Out of six equal parts, three parts are blue-coloured.

(4) Here, the circle is divided into eight equal parts. Out of eight equal parts, four parts are blue-coloured.

So, we can say that,

$$12 = 24 = 36 = 48$$

Page : 62 , Block Name : Coloured Parts

Q1 Ramesh bought a piece of halwa for his children Ammu and Anu.

He divided it equally for them.

• Each will get _____ part of halwa.

“This piece is too big. We can’t eat it”, they said.

So he divided the pieces into half again. Now how many pieces will Ammu get? _____

• What part of the halwa is it? _____

“Make it even smaller, Dad” they asked. So he again cut the halwa into smaller pieces.

“Ok, thank you, Dad.”

• Now how many pieces will each get?

• What part of the halwa is each piece now?

• 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 --

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

Answer. When Ramesh divides the piece of halwa in two parts, then each child will get half part of halwa. Each will get 12 part of halwa.

- When each of the two pieces of halwa is divided into 2 equal parts, then there will be a total of 4 pieces of halwa. Now, each of the child gets 2 pieces of halwa.

Thus, Ammu will get 2 pieces of halwa. Total number of pieces of halwa = 4

Number of pieces with Ammu = 2

Part of halwa that Ammu gets = $\frac{2}{4} = \frac{1}{2}$

Thus, Ammu will get half part of the halwa.

- When each of the 4 pieces cut again into halves, then we have a total of 8 pieces of halwa. Now, each child will get 4 pieces of halwa.

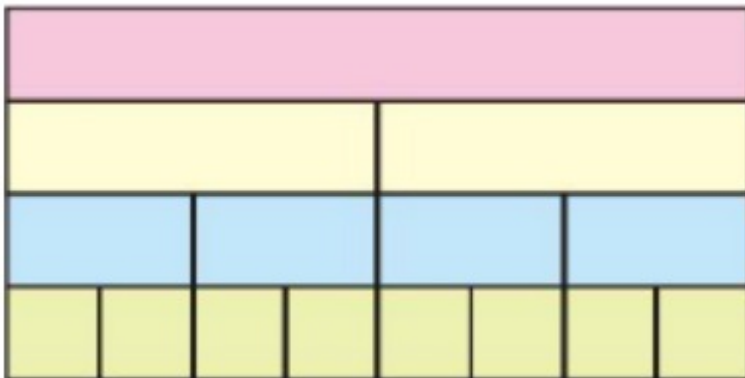
- As one whole piece of halwa is now divided into 8 equal halves, each piece is 18 part of the whole piece.

- When Ramesh divides the halwa into 6 equal parts, then each of the 2 child gets 3 pieces of halwa.

$$12 = 24 = 36 = 48 = 510 = 612$$

Page : 64 , Block Name : Cutting The Halwa

Q1 Look at the picture. Write what part of the strip is each green piece. Write the part for a piece of each colour.

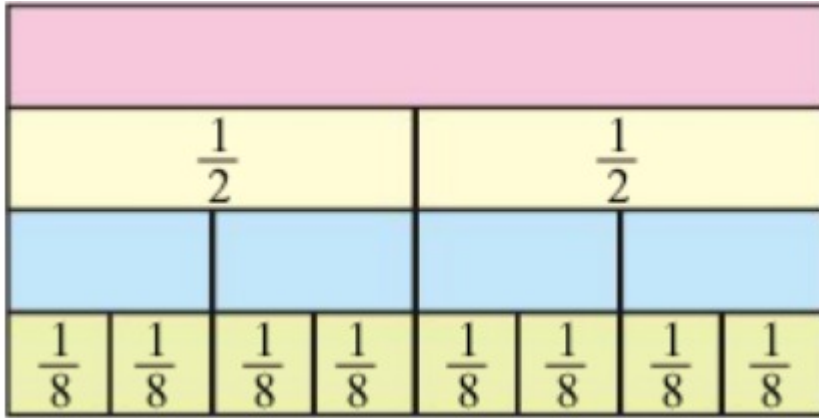


How many one-fourths will make a half?

How many $\frac{1}{8}$ will make $\frac{1}{4}$?

How many $\frac{1}{8}$ are in $\frac{1}{2}$?

Now ask your friends some questions on the same picture.



Answer.

The green strip is divided into 4 equal parts. Thus, each part is $\frac{1}{4}$ of the whole green strip. Two one-fourths will make a half.

$$\frac{1}{4} + \frac{1}{4} = \frac{1}{2} .$$

Two one-eighths will make $\frac{1}{4} = \frac{1}{8} + \frac{1}{8} = \frac{1}{4}$

Page : 64 , Block Name : Parts Of The Strip

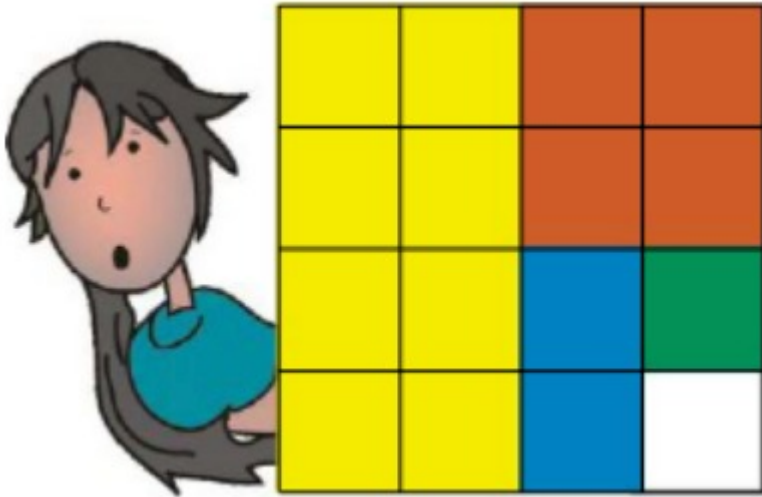
Q2 Look at this square.

What part is coloured blue?

What part is green?



Answer. We will draw a grid to find the portion of each colour in the following square.



Total number of small squares in the grid = 16

Number of small blue coloured squares = 2

Fraction of blue shaded square = $\frac{2}{16} = \frac{1}{8}$.

Thus, one-eighth of the square is shaded blue.

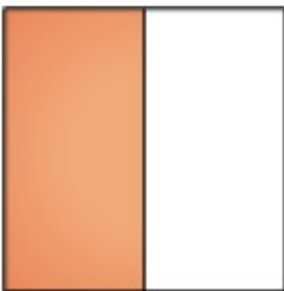
Number of green shaded squares = 1 Fraction of green shaded square = $\frac{1}{16}$

Thus, one-sixteenth of the square is shaded green.

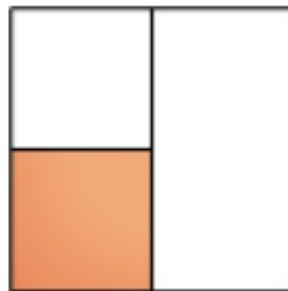
Page : 64 , Block Name : Patterns

Q3 Ammini says half of half and one-third of three-quarters are equal. Do you agree? How will you show this?

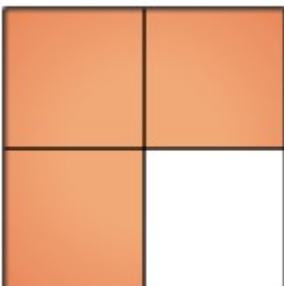
Answer. We can show the above with the help of figures.



Half



Half of half



So, half of half is equal to one-quarter, and one-third of three-quarters is equal to one-quarter. Thus, we can say that half of half is equal to one-third of three quarters.

Q1 This show $\frac{1}{5}$ petals of a flower. Complete the flower by drawing the other petals.



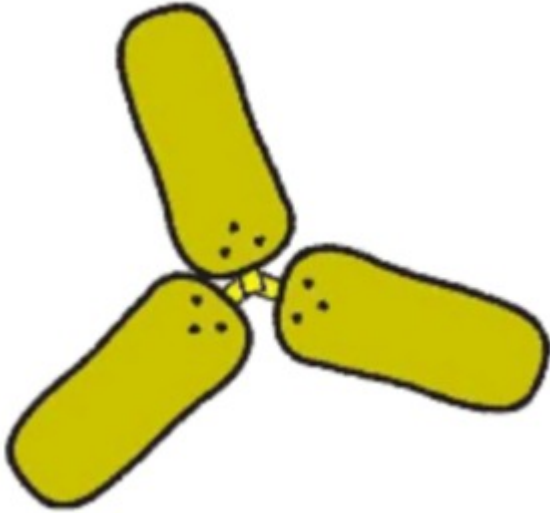
Answer.



Q2 The picture shows one-third of the blades of a fan. Complete the picture by drawing the other blades.

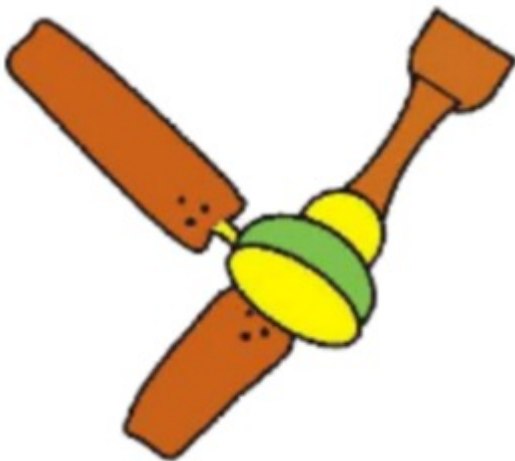


Answer.

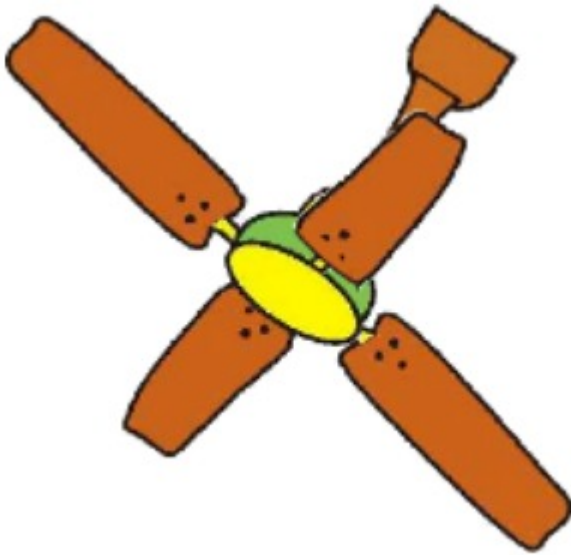


Page : 65 , Block Name : From A Part To The Whole

Q3 Half of the blades of another fan are shown here. Complete the picture by drawing the other half. How many blades have you drawn?



Answer. We have drawn two more blades to complete the picture.



Page : 65 , Block Name : From A Part To The Whole

Q1 How many



will make one rupee? Is 50 paise half of one rupee? How many



will make one rupee?

25 paise is _____ part of one rupee 20 paise is _____ part of one rupee How many 10 paise will make one rupee? So 10 paise is _____ part of one rupee.

Answer. We know that,

One rupee = 100 paise Number of 50 paise coins in one rupee = $100 \div 50 = 2$

So, two 50 paise coin will make one rupee.

There are two 50 paise coin in one rupee. So, 50 paise is half of one rupee.

We know that, 100 paise = Re 1 Number of 25 paise in one rupee = $100 \div 25 = 4$

So, four 25 paise coins will make 1 rupee.

We know that, four 25 paise coins will make 1 rupee.

So, 25 paise is one-fourth part of one rupee.

Number of 20 paise coin in one rupee = $100 \div 20 = 5$ There are five 20 paise coin in one rupee.

So, 20 paise is one-fifth part of one rupee.

Number of 10 paise coin in one rupee = $100 \div 10 = 10$ Ten 10 paise coin will make one rupee.

So 10 paise is one-tenth part of one rupee.

Page : 65 , Block Name : Rupees And Paise

Q1 My eldest daughter will get half of my camels. My second daughter will get one fourth of my camels. My third daughter will get one fifth of my camels. How did this happen? Discuss.

Answer. Total number of camels = 20

First daughter will get $\frac{1}{2} \times 20 = 10$

Second daughter will get $\frac{1}{4} \times 20 = 5$

Third daughter will get $\frac{1}{5} \times 20 = 4$

Page : 66 , Block Name : An Old Woman's Will

Q1 How many hours does Arun take for?

Answer. Sleeping : 8 Hours.

Studying : 6 Hours

Playing : 3 Hours

Page : 67 , Block Name : Arun's Time Table

Q1 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 of those months.

Answer. They will have 4 magazines in a year, and the magazines will be printed in March, June, September and December.

Page : 68 , Block Name : School Magazine

Q1 Most people sleep about 8 hours a day. Then what part of a day is it? _____

Answer. It is $\frac{8}{24} = \frac{1}{3}$ part of the day.

Page : 68 , Block Name : Sleeping Beauty

Q2 So what part of a year do they sleep? A person 60-year-old must have slept _____ years.

Answer. An old person must have slept $\frac{1}{3} \times 60 = 20$ years.

Page : 68 , Block Name : Sleeping Beauty

Q1 How much does 2kg of tomato cost?

Answer. $2\text{kg} = 2 \times 12 = \text{Rs.}24$

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Q2 How much does $\frac{1}{2}$ kg of tomato cost?

Answer. $\frac{1}{2}\text{kg} = \frac{1}{2} \times 12 = \text{Rs.}6$

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Q3 Kiran wants $2\frac{1}{2}$ kg of tomato. How much will cost?

Answer. Cost of $2\frac{1}{2}$ kg tomato = $2\frac{1}{2} \times 12 = \text{Rs.}30$
 $= \frac{5}{2} \times 12$

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Q4 How much does $3\frac{1}{2}$ kg potato cost?

Answer. Cost of $3\frac{1}{2}$ kg potato = $3\frac{1}{2} \times 10 = \frac{7}{2} \times 10$
Rs. 35

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Q5 What is the price of $1\frac{1}{4}$ kg of carrot?

Answer. Cost of $1\frac{1}{4}$ kg carrot = $1\frac{1}{4} \times 18 = \frac{5}{4} \times 18$
Rs. 22.50

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Q6 He bought a gourd of weight $4\frac{3}{4}$ kg and its costs?

Answer. Cost of $4\frac{3}{4}$ kg gourd = $4\frac{3}{4} \times 8 = \frac{48}{4} \times 8$
Rs. 96

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Q1 What time is the train expected to come today?

Answer. The right time of train = 6:45

The train is 30 min late

The correct time of arrival = $7:45 + 0:30 = 7:15$

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Q2 Nazia gets off at a station after $2\frac{1}{2}$ hours from this station. What time will she get off?

Answer. Nazia's time after = $7:15 + 2:30 = 9:45$

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Q3 Shazi will take 5 hours to reach Ernakulam by this train. At what time will he reach there?

Answer. Shazi's time after 5h = $7:15 + 5:00 = 12:15$

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