

**HOLYFAITH PRESENTATION SCHOOL  
RAWALPORA SRINAGAR**

**CLASS: 5TH**

**SUBJECT: Mathematics**

**SESSION 2024 – 2025**

**ASSIGNMENT: FORMATIVE ASSESSMENT-II**

## PARTS AND WHOLES

### Parts a

**1. Draw a rectangle of length 9 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).**

**(i) What is the colour of the middle one-third of the flag?**

**Solution:-**

The colour of the middle one-third of the flag is white.

**(ii) Where will you draw the Ashoka Chakra?**

**Solution:-**

I will draw the Ashoka Chakra in the middle of the white portion of the flag.

**(iii) How much of the flag will you colour green?**

**Solution:-**

(1/3)<sup>rd</sup> portion of the flag will be coloured green.

**(iv) Is the white colour now less than 1/3 of the flag? Why?**

**Solution:-**

Yes, the white colour is less than 1/3 of the flag because the Ashoka Chakra is present in the white portion.

**2. Now look at this flag. How much of it is black?**



**Solution:-**

There are 3 portions, so the  $\frac{1}{3}$ rd portion of the flag contains black colour.

**(i) The green part of the flag can be written as.**

**Solution:-**

The green part of the flag can be written as one-third.

**(ii) Is red less than one-third of the flag? Why?**

**Solution:-**

Yes, the red colour is less than  $\frac{1}{3}$  of the flag because the white emblem is present in the red portion.

**3. This is the flag of Myanmar, our neighbour.**



**(i) Is blue more than one-fourth of the flag or less?**

**Solution:-**

The blue colour is less than one-fourth of the flag.

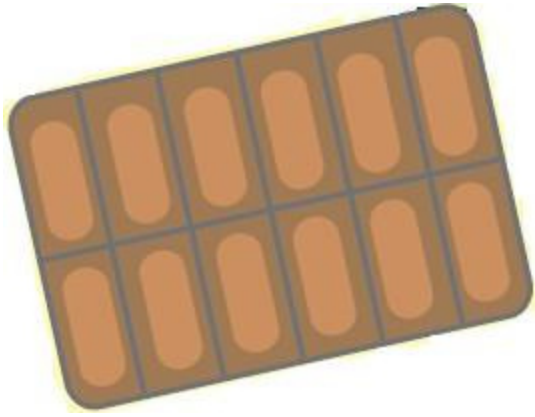
**(ii) Guess how much of the flag is red. Is it more than  $\frac{1}{2}$ ? Is it more than three-fourths?**

**Solution:-**

It is more than half and also it is more than three-fourths.

**4. Practice time**

**(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?

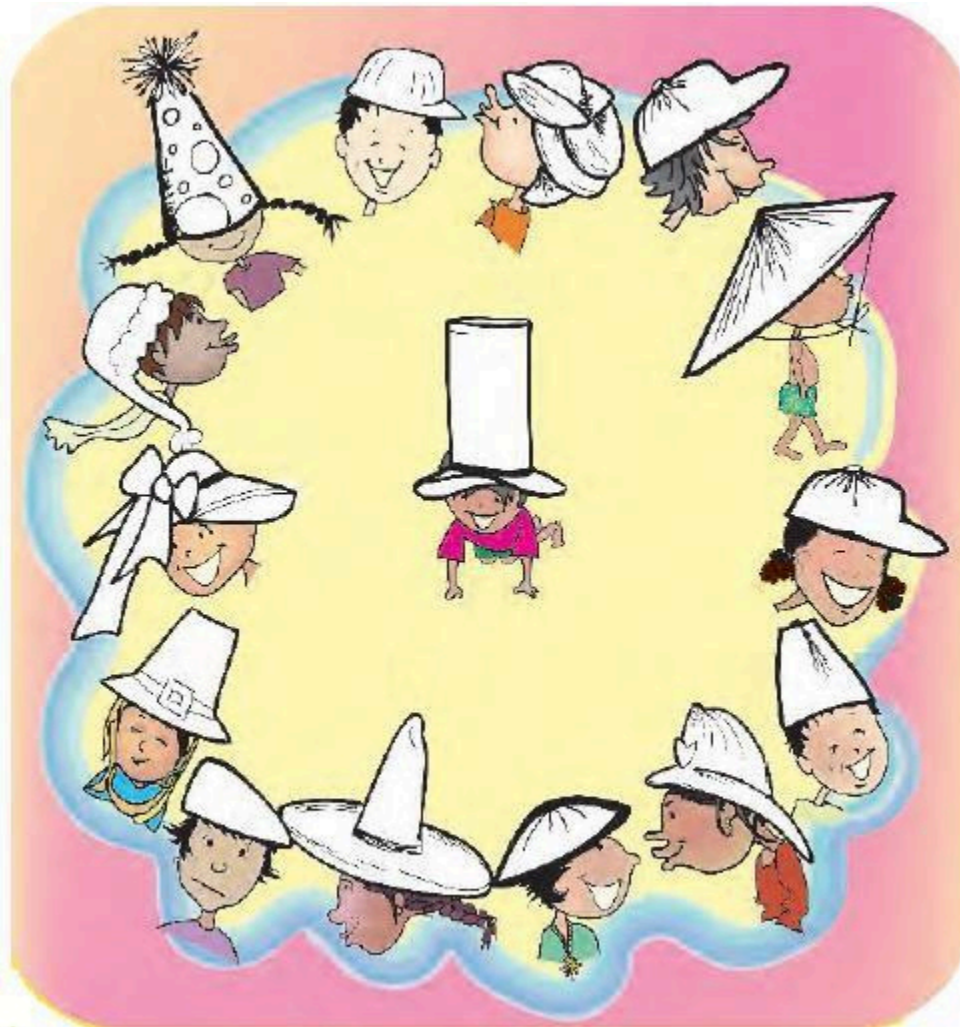
**Write here. Solution:-** Manju had a chocolate.

Number of bites in the chocolate is 12.

She gave one-fourth of it to Raji =  $\frac{1}{4} \times 12 = 3$  bites Sugatha got one-third of it =  $(\frac{1}{3}) \times 12 = 4$  bites Sheela got one-sixth of it =  $(\frac{1}{6}) \times 12 = 2$  bites **(i) What part of the**

**chocolate did Manju eat? Solution:-** Part of the chocolate remains with Manju =  $12 - (3 + 4 + 2) = 12 - 9 = 3$  bites Therefore, Manju ate 3 bites of chocolate. **(B) Colour the**

**hats**



- (i) Colour  $\frac{1}{3}$  of the hats in red.
- (ii) Colour three-fifth of the hats blue.
- (iii) How many hats did you colour red?
- (iv) How many hats did you colour blue?
- (v) What part of the hats are not coloured?

**Solution:-**

The total number of hats in the given figure = 15

(i) Out of 15 colours,  $\frac{1}{3}$  of the hats are in red =  $\frac{1}{3} \times 15$   
= 5 hats

(ii) Out of 15 colours, three-fifth of hats are in blue =  $\frac{3}{5} \times 15$   
=  $3 \times 3$   
= 9 hats

(iii) 5 hats are coloured red.

(iv) 9 hats are coloured blue.

(v) Number of hats coloured = 14

Total number of hats = 15

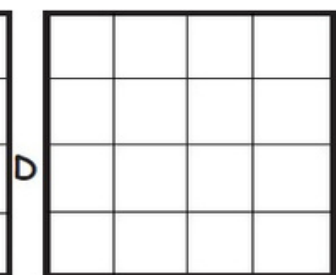
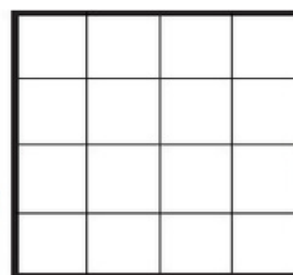
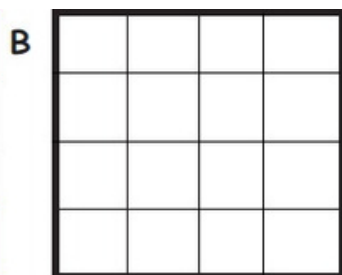
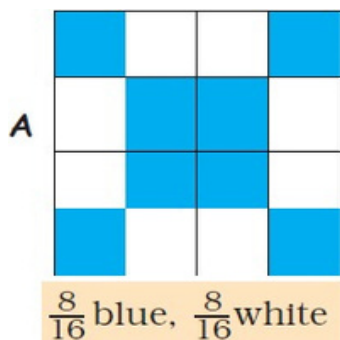
So, the number of hats not coloured =  $15 - 14$

= 1 hat

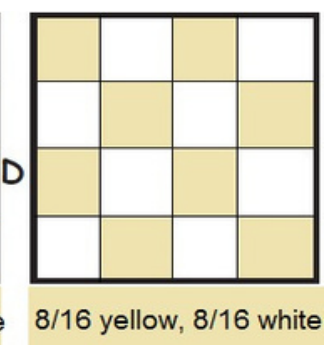
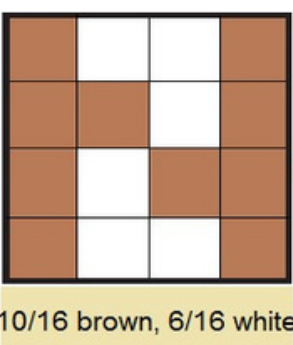
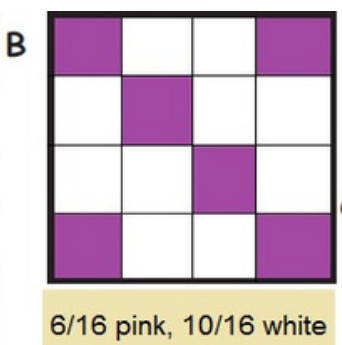
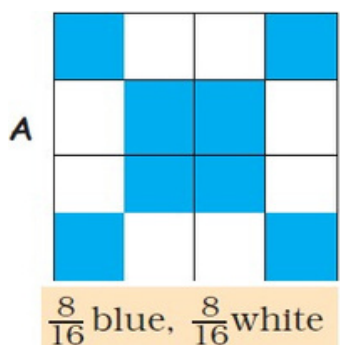
Therefore,  $(1/15)$ th part of the hats are not coloured.

Patterns in parts Page: 57

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



**Solution:-**



**2) Look at grid A again. Is the grid coloured**

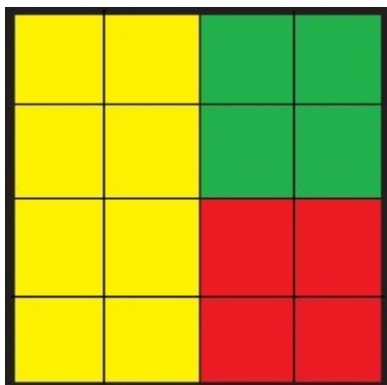
(a)  $\frac{1}{2}$  blue,  $\frac{1}{2}$  white? (b)  $\frac{2}{4}$  blue,  $\frac{2}{4}$  white?

(c)  $\frac{3}{8}$  blue,  $\frac{5}{8}$  white? (d)  $\frac{4}{8}$  blue,  $\frac{4}{8}$  white?

Mark (X) on the wrong answer.

**Solution:-**

(a)  $\frac{1}{2}$  blue,  $\frac{1}{2}$  white (b)  $\frac{2}{4}$  blue,  $\frac{2}{4}$  white (c)  $\frac{3}{8}$  blue,  $\frac{5}{8}$  white (X) (d)  $\frac{4}{8}$  blue,  $\frac{4}{8}$  white Because (a)  $\frac{1}{2}$  blue,  $\frac{1}{2}$  white =  $\frac{8}{16}$  =  $\frac{1}{2}$  ... [divide both denominator and numerator by 8] (b)  $\frac{2}{4}$  blue,  $\frac{2}{4}$  white =  $\frac{8}{16}$  =  $\frac{2}{8}$  ... [divide both denominator and numerator by 4] (d)  $\frac{4}{8}$  blue,  $\frac{4}{8}$  white =  $\frac{8}{16}$  =  $\frac{4}{8}$  ... [divide both denominator and numerator by 2] **3) Draw grids of 16 squares and make patterns with (a)  $\frac{2}{8}$  red,  $\frac{1}{2}$  yellow,  $\frac{1}{4}$  green (b)  $\frac{3}{16}$  blue,  $\frac{5}{16}$  red,  $\frac{1}{2}$  green Solution:-** (a)  $\frac{2}{8}$  red,  $\frac{1}{2}$  yellow,  $\frac{1}{4}$  green Out of 16 squares  $\frac{2}{8}$  red =  $\frac{2}{8} \times 16 = 2 \times 2 = 4$  red squares Out of 16 squares  $\frac{1}{2}$  yellow =  $\frac{1}{2} \times 16 = 1 \times 8 = 8$  yellow squares Out of 16 squares  $\frac{1}{4}$  green =  $\frac{1}{4} \times 16 = 1 \times 4 = 4$  green squares



(b)  $\frac{3}{16}$  blue,  $\frac{5}{16}$  red,  $\frac{1}{2}$  green

Out of 16 squares  $\frac{3}{16}$  blue =  $\frac{3}{16} \times 16$

$$= 3 \times 1$$

= 3 blue squares

Out of 16 squares  $\frac{5}{16}$  red =  $\frac{5}{16} \times 16$

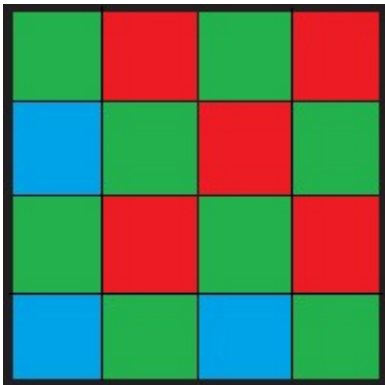
$$= 5 \times 1$$

= 5 red squares

Out of 16 squares  $\frac{1}{2}$  green =  $\frac{1}{2} \times 16$

$$= 1 \times 8$$

= 8 green squares



Ramu's vegetable field Page: 58

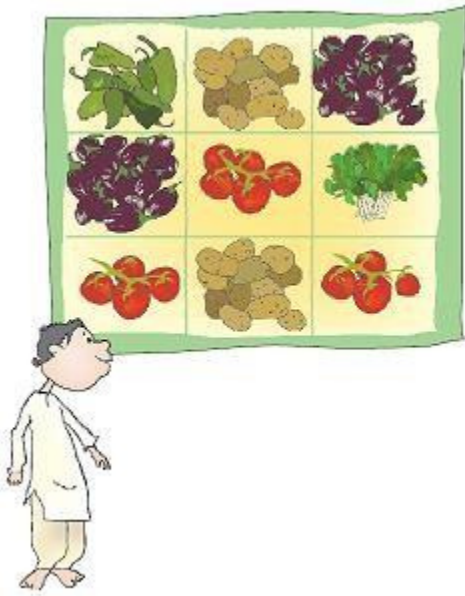
**Ramu's vegetable field has 9 equal parts.**

**1. What vegetables does he grow?**

**Solution:-**

Ramu grows chillis, potatoes, brinjals, tomatoes and spinach in his vegetable field.





**i) Which vegetable grows in the biggest part of his field? What part?**

**Solution:-**

He grows tomatoes in the biggest part of the field.

Out of 9 equal parts, 3 of them contain tomato, i.e.,  $(3/9)$ th part of his field contains tomato.

**ii) On what part of the field does he grow potatoes?**

**Solution:-**

Out of 9 equal parts, 2 of them contain potatoes.

So,  $(2/9)$ th part of his field contains potatoes.

**iii) What part of the field is used to grow spinach? What part is used for brinjals?**

**Solution:-**

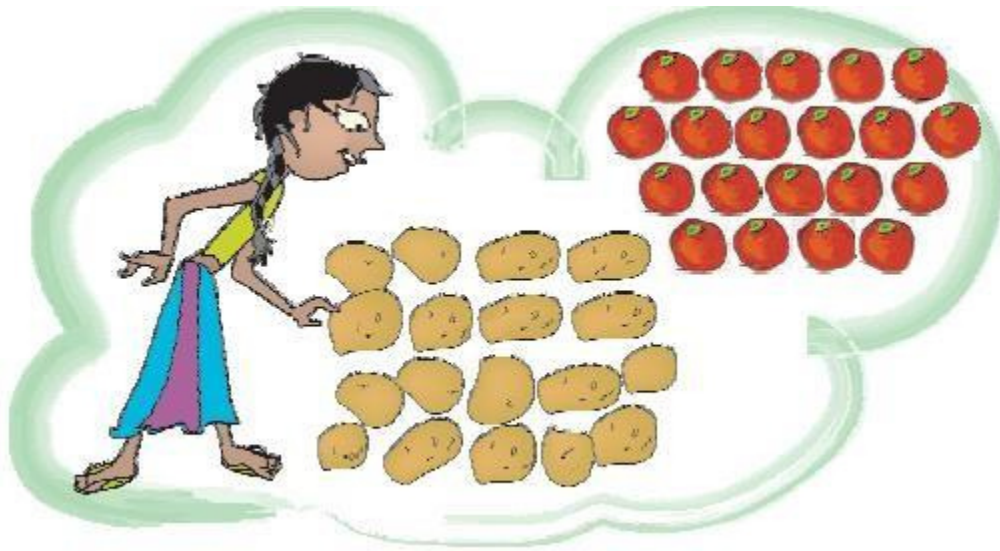
Out of 9 equal parts, only one part contains spinach.

So,  $(1/9)$ th part of his field contains spinach.

Out of 9 equal parts, 2 parts contain brinjals.

So,  $(2/9)$ th part of his field contains brinjals.

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



**Solution:-** From the given figure, Total number of potatoes = 18 Total number of tomatoes = 20 From the question, Ramu wanted to give these vegetables to his friends. Aboobacker got one-fifth of these tomatoes =  $(1/5) \times 20 = 1 \times 4 = 4$  Aboobacker got  $1/3$  of the potatoes =  $(1/3) \times 18 = 1 \times 6 = 6$  Srija got  $2/5$  of the tomatoes =  $(2/5) \times 20 = 2 \times 4 = 8$  Srija got  $3/6$  of the potatoes =  $(3/6) \times 18 = 3 \times 3 = 9$

Then,

Nancy got the rest of these vegetables.

Total number of vegetables, including potatoes and tomatoes =  $20 + 18$

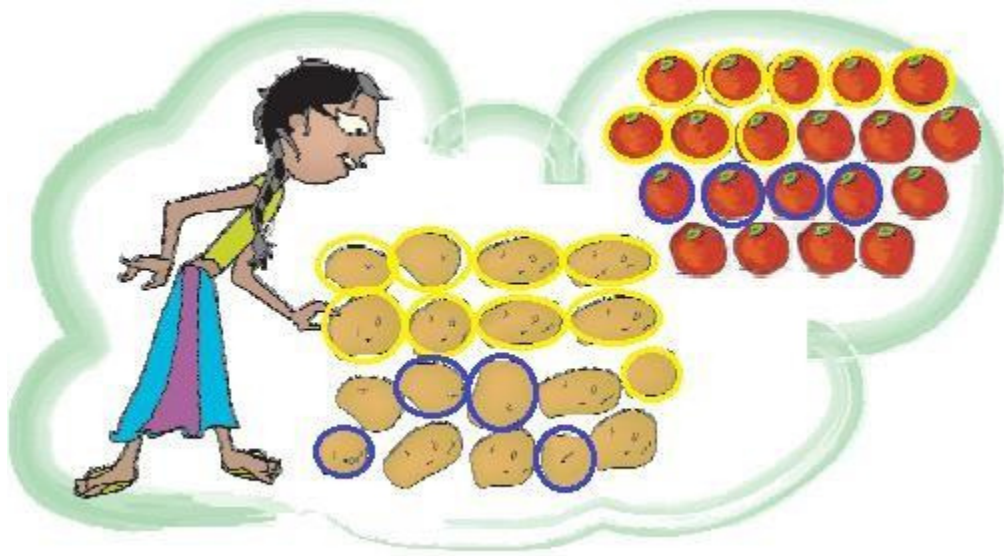
= 38

Number of vegetables Aboobacker and Srijja got =  $4 + 6 + 8 + 9$

= 27

So, Nancy got =  $38 - 27$

= 11 vegetables



**(i) How many potatoes and tomatoes did Nancy**

**get? Solution:-** From the above solution, Total

number of tomatoes = 20 Total number of potatoes

= 18 Then, Number of tomatoes Aboobacker and

Srijja got =  $4 + 8 = 12$  Number of potatoes

Aboobacker and Srijja got =  $6 + 9 = 15$

Now,

Number of tomatoes Nancy got =  $20 - 12$

= 8 tomatoes

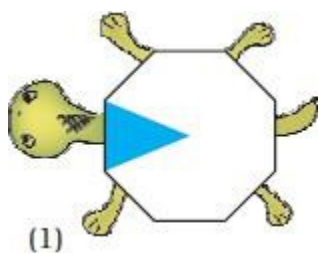
Number of potatoes Nancy got =  $18 - 15$

= 3

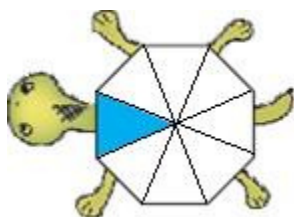
Guess and Check Page: 61

**A) What part of each shape is coloured?**

**First, guess the answer, then check.**

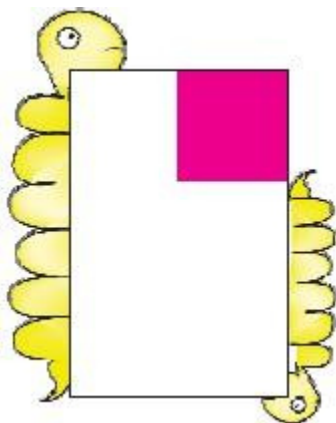


**Solution:-**

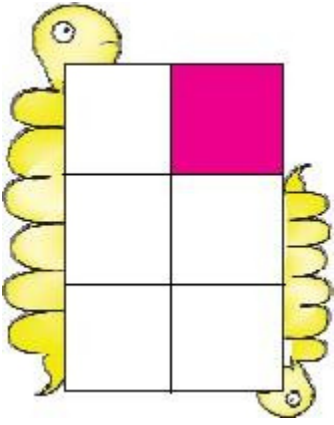


By looking at the figure, we can say that  $\frac{1}{8}$  of the shape is coloured.

**(2)**

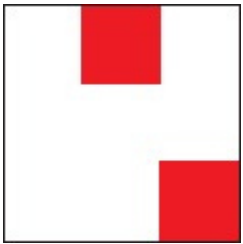


**Solution:-**

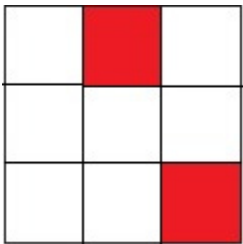


By looking at the figure, we can say that  $\frac{1}{6}$  of the shape is coloured.

(3)

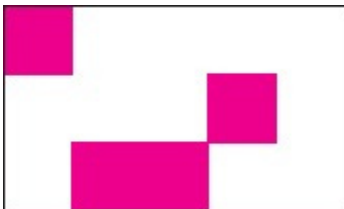


**Solution:-**

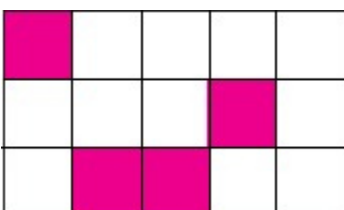


By looking at the figure, we can say that  $\frac{2}{9}$  of the shape is coloured.

(4)



**Solution:-**

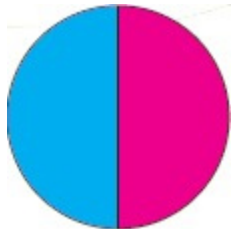


By looking at the figure, we can say that  $\frac{3}{12}$  of the shape is coloured.

## 2. Coloured Parts

Complete these

(i)

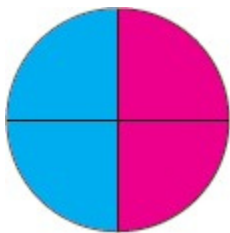


This circle is divided into two equal parts. Out of equal parts, one part is coloured blue.

**Solution:-**

This circle is divided into two equal parts. Out of equal 2 parts, one part is coloured blue.

(ii)

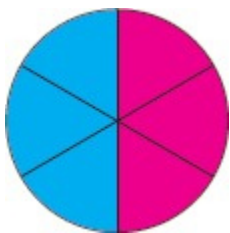


Here, the circle is divided into equal parts. Out of equal parts, parts are coloured blue.

**Solution:-**

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

(iii)

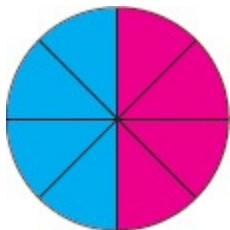


Here, the circle is.....

**Solution:-**

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

(iv)



Here, the circle is.....

**Solution:-**

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

So, we can say that  $\frac{1}{2} = (2/4) = (3/6) = (4/8)$

### 3. Cutting the Halwa

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

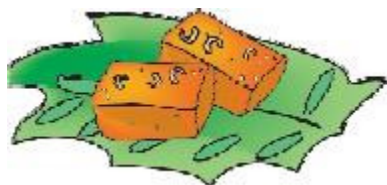


He divided it equally for them.

(i) Each will get \_\_\_\_\_ part of halwa.

**Solution:-**

Each will get  $\frac{1}{2}$  part of the halwa.

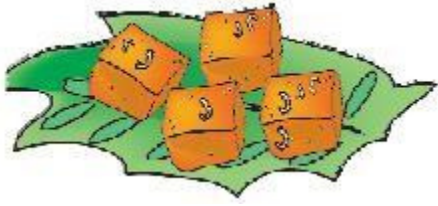


This piece is too big. We can't eat it, they said.

(ii) So he divided the pieces into half again. Now, how many pieces will Ammu get?

**Solution:-**

Ammu gets two pieces.



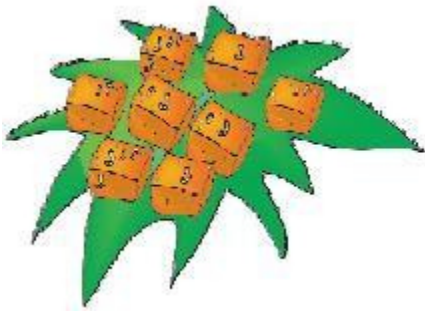
**(iii) What part of the halwa is it?**

**Solution:-**

$\frac{2}{4}$  part of halwa, or  $\frac{1}{2}$  part of halwa.

**“Make it even smaller, Dad,” they asked.**

**So, he again cut the halwa into smaller pieces.**



**“Ok, thank you, Dad.”**

**(i) Now, how many pieces will each get?**

**Solution:-**

Now, Ammu and Anu get four pieces each.

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

**Solution:-**

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

**(iii) If Ramesh had cut the halwa into 6 equal parts, how many pieces each have got? Look at your answers for questions 1 to 4 and write —  $\frac{1}{2} = = =$**

**Solution:-**

If Ramesh had cut the halwa into 6 equal parts, each got 3 pieces of halwa.

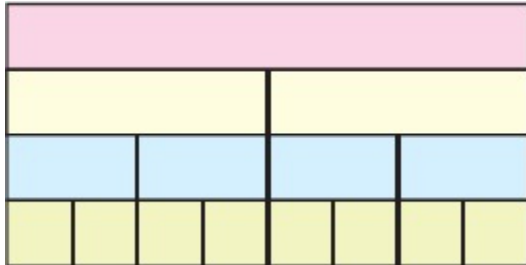
Then,



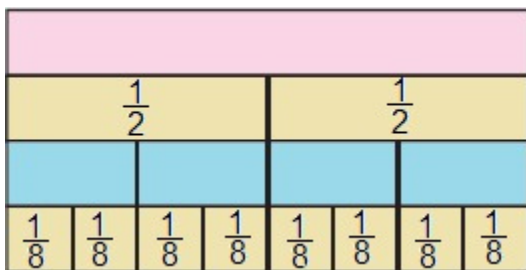
$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$$

#### 4. Parts of the Strip

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



**Solution:-**



(ii) How many one-fourths will make a half?

**Solution:-**

Two one-fourth will make a half.

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

$$= \frac{2}{4} \text{ [divide both numerator and denominator by 2]}$$

$$= \frac{1}{2} = \text{half}$$

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

**Solution:-**

Two  $\frac{1}{8}$  will make  $\frac{1}{4}$ .

$$= \frac{1}{8} + \frac{1}{8}$$

$$= \frac{2}{8} \text{ [divide both numerator and denominator by 2]}$$

$$= \frac{1}{4}$$

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

**Solution:-**

Four  $\frac{1}{8}$  are in  $\frac{1}{2}$ .

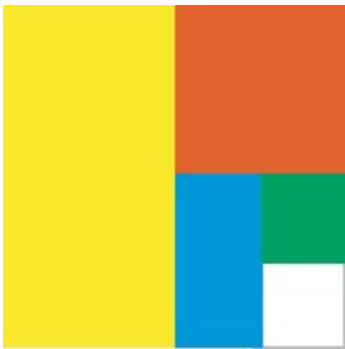
$$= \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

$$= \frac{4}{8}$$

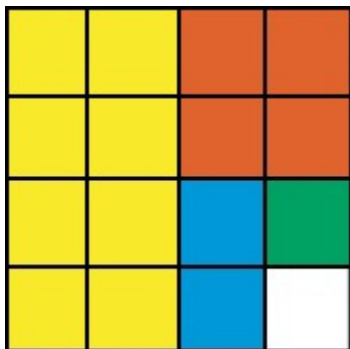
$$= \frac{1}{2} \text{ [divide both numerator and denominator by 4]}$$

**5. Patterns**

**Look at the square.**



**(i) What part is coloured blue?**

**Solution:-**

From the above figure, we can say that out of 16 squares, 2 squares are coloured blue.  
i.e.  $\frac{2}{16}$  or  $\frac{1}{8}$  part is coloured blue.

**(ii) What part is green?**

**Solution:-**

From the above figure, we can say that, out of 16 squares, 1 square is coloured green.  
i.e.,  $\frac{1}{16}$  part is coloured green.

## 6. From a Part to the Whole

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



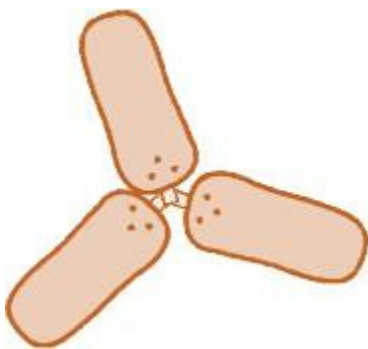
**Solution:-**



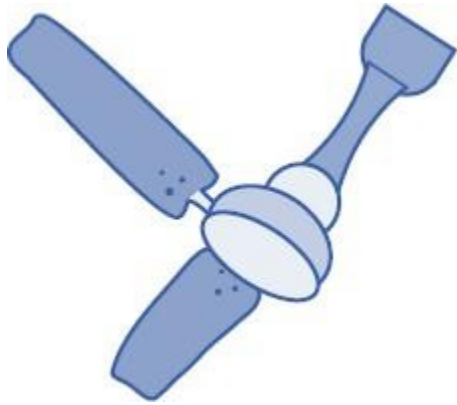
(ii) The picture shows one-third of the blades of a fan. Complete the picture by drawing the other blades.



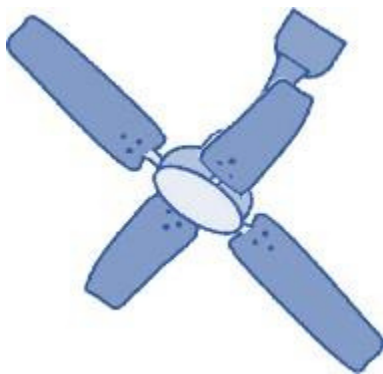
**Solution:-**



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



**Solution:-**



## 7. Rupees and Paise



**(i) How many will make one rupee?**

**Solution:-**

Two 50 paise coins make one rupee coin.

**(ii) Is 50 paise half of one rupee?**

**Solution:-**

Yes, 50 paise is half of one rupee.



**(iii) How many will make one rupee?**

**Solution:-**







## 10. Sleeping Beauty

Have you heard of Kumbhakarna, the brother of Ravana? He is famous for sleeping for half a year.

(i) Most people sleep about 8 hours a day. Then what part of the day is it?

**Solution:-**

We know that, 24 hours a day.

Given, most people sleep about 8 hours a day =  $8/24$

=  $1/3$  part of a day

(ii) So what part of the year do they sleep? A person 60 years old must have slept \_\_\_\_\_ years!!!

**Solution:-**

A person 60 years old must have slept for =  $1/3 \times 60$

=  $1 \times 20$

= 20 years

## 11. Keerti's shopping list



**Look at the yellow price list. a) How much does 2 kg**

**of tomato cost? Solution:-** From the price list, 1 kg of tomato = ₹ 12 Then, the cost of 2 kg of tomato =  $12 \times 2 = ₹ 24$  **b) How much does kg of tomato cost?**

**Solution:-** From the price list, 1 kg of tomato = ₹ 12 **c)**

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

**Solution:-** From the price list, 1 kg of tomato = ₹ 12 For  $\frac{1}{2}$  kg of tomato =  $\frac{1}{2} \times 12 = ₹ 6$  Then, the cost of 2 kg of tomato =  $12 \times 2 = ₹ 24$  So, the cost of  $2\frac{1}{2}$  kg of tomato =  $24 + 6 = ₹ 30$  **d) How much does  $3\frac{1}{2}$  kg potato cost?**

**Solution:-** From the price list, 1 kg of potato = ₹ 10 For  $\frac{1}{2}$  kg of potato =  $\frac{1}{2} \times 10 = ₹ 5$  Then, 3 kg of potato =  $3 \times 10 = ₹ 30$



So, cost of  $3\frac{1}{2}$  kg of potato =  $30 + 5$

= ₹ 35

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

**Solution:-**

From the price list, 1 kg of Carrot = ₹ 18

For  $\frac{1}{4}$  kg of carrot =  $\frac{1}{4} \times 18$

=  $\frac{9}{2}$

= ₹ 4.5

Then,  $1\frac{1}{4}$  kg of carrot =  $18 + 4.5$

= ₹ 22.5

**f) She bought a gourd of weight  $4\frac{3}{4}$  kg, and it costs?**

**Solution:-**

From the price list, 1 kg of gourd = ₹ 8

For 4 kg of gourd =  $8 \times 4$

= ₹ 32

For  $\frac{3}{4}$  kg of gourd =  $\frac{3}{4} \times 8$

=  $3 \times 2$

= ₹ 6

Then, cost of  $4\frac{3}{4}$  kg of gourd =  $32 + 6$

= ₹ 38

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

**Solution:-**

Item	Price per kg	Total price
Potato $2\frac{1}{4}$	10	22.50

Carrot 3 $\frac{1}{4}$	18	67.50
Gourd 1	8	12
$\frac{1}{2}$ Total		Rs: 102

## 12. Raheem's journey

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

**Solution:-**

From the question, it is given that

To reach the school Raheem has to travel =  $1\frac{1}{4}$  km =  $\frac{5}{4}$  km

From school to home =  $1\frac{1}{4}$  km =  $\frac{5}{4}$  km

Total distance travelled by Raheem =  $\frac{5}{4} + \frac{5}{4}$

=  $\frac{10}{4}$

=  $\frac{5}{2}$

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

Therefore, he travels to go to school and comes back home =  $2\frac{1}{2}$  km

## 13. What coins?

**Latha 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 coins she got?**

From the question, it is given that

Latha bought a pencil and a pen for = ₹  $7\frac{1}{2}$

Money given by Latha to the shopkeeper = ₹ 10

Shopkeeper gave back the money =  $10 - 7.5$

= ₹ 2.5

So, the shopkeeper can return ₹ 2.5 in the following ways:

a) 1 half rupee coin and 8 quarter rupee coins

b) 2 half rupee coins and 6 quarter rupee coins c) 3 half rupee coins and 4 quarter rupee coins d) 4 half rupee coins and 2 quarter rupee coins **14. 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?**

**Solution:-**

The right time is a quarter to 7, i.e., 6: 45

But, the train is delayed by half an hour, i.e., 30 minutes.

So, the exact time the train will arrive at  $6: 45 + 0: 30 = 7: 15$

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

**Solution:-**

From the question,

Nazia gets off at a station after = 2: 30 hours

Then, total time taken by Nazia to reach =  $2: 30 + 7: 15$

= 9: 45

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

**Solution:-**

From the question, it is given that

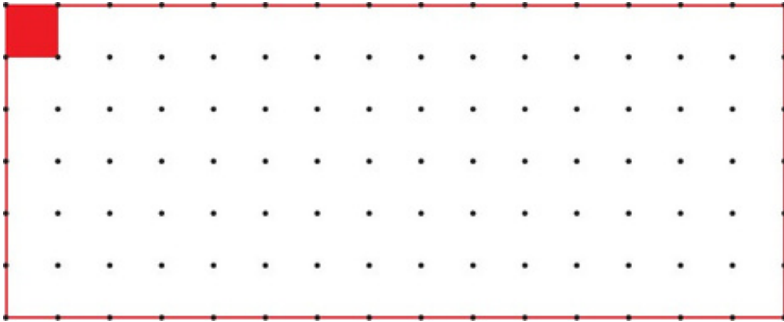
Shaji will take 5 hours to reach Ernakulam.

Then, the total time taken by Shaji to reach Ernakulam =  $7: 15 + 5$

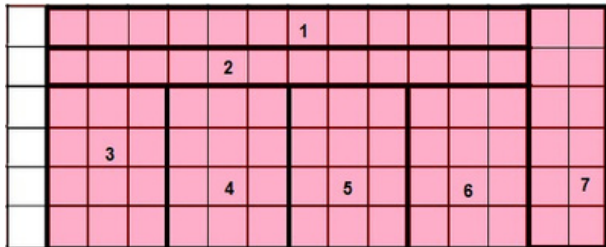
= 12: 15

## HOW MANY SQUARES

1.



(i) Measure the side of the square on the dotted sheet. Draw here as many rectangles as possible using 12 such squares.



Solution:-

The side of the square on the dotted sheet is 1 cm.

(ii) How many rectangles could you make?

Solution:-

We can make 7 rectangles.

2. Each rectangle is made out of 12 equal squares, so all have the same area, but the length and the boundary will be different.

(i) Which of these rectangles has the longest perimeter?

Solution:-

From the above figure, we can say that rectangles 1 and 2 have the longest perimeter.

We know that, perimeter of rectangle = 2 (length + breadth)

$$= 2 (1 + 12)$$

$$= 2 \times 13$$

$$= 26 \text{ cm}$$

(ii) Which of these rectangles has the smallest perimeter?

Solution:-

From the above figure, we can say that rectangles 3, 4, 5 and 6 have the smallest perimeter.

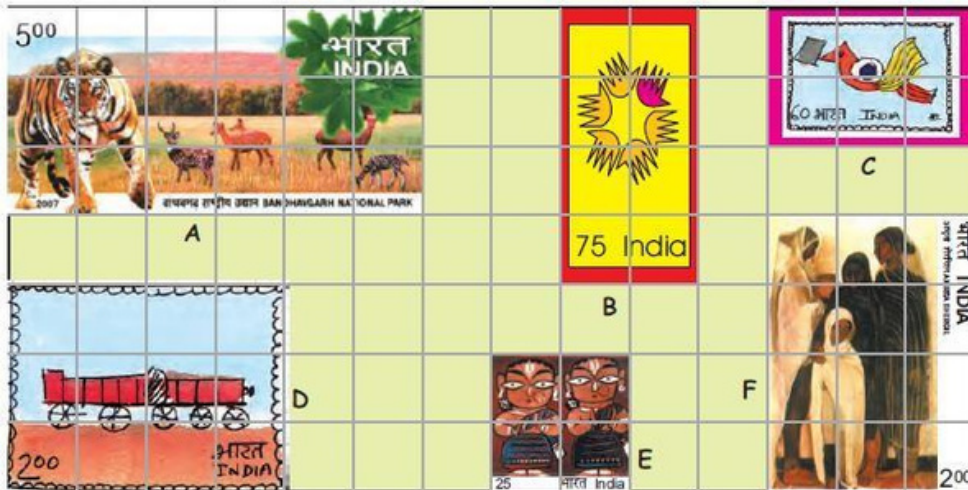
We know that, perimeter of rectangle = 2 (length + breadth)

$$= 2 (3 + 4)$$

$$= 2 \times 7$$

$$= 14 \text{ cm}$$

3.



Look at these interesting stamps.

(a) How many squares of one-centimetre side do stamp A and stamp B cover?

Solution:-

Stamp A covers 18 squares of the one-centimetre side, and Stamp B covers 8 squares of the one-centimetre side.

(b) Which stamp has the biggest area?

Solution:-

Stamp 'A' has the biggest area because it has 18 squares.

(i) How many squares of side 1 cm do this stamp cover?

Solution:-

This stamp has 18 squares of side 1 cm.

(ii) How much is the area of the biggest stamp?

Solution:-

The biggest stamp is in the shape of a rectangle.

Thus, the area of the biggest stamp is = length  $\times$  breadth

$$= 3 \times 6$$

$$= 18 \text{ cm}^2$$

c) Which two stamps have the same area?

Solution:-

Stamp 'D' and stamp 'F' have the same area.

(i) How much is the area of each of these stamps in square cm?

Solution:-

We know that area of the rectangle = length  $\times$  breadth

So, the area of the stamp 'D' =  $3 \times 4$

$$= 12 \text{ cm}^2$$

Area of stamp 'F' =  $4 \times 3$

$$= 12 \text{ cm}^2$$

Therefore, the area of stamp 'D' is equal to the area of stamp 'F'.

d) The area of the smallest stamp is \_\_\_\_ square cm.

Solution:-

The area of smallest stamp 'E' = length  $\times$  breadth

$$= 2 \times 2$$

$$= 4 \text{ cm}^2$$

Therefore, the area of the smallest stamp is 4 square cm.

(i) The difference between the area of the smallest and the biggest stamp is square cm.

Solution:-Area of the biggest stamp = 18 cm<sup>2</sup>

Area of the smallest stamp = 4 cm<sup>2</sup>

Then,

The difference between the area of the smallest and the biggest stamp =  $18 - 4$   
= 14 cm<sup>2</sup>

4. Guess

a) Which has the bigger area — one of your footprints or the page of the textbook?

Solution:-When comparing the area of the footprints and the area of the page of the textbook, the area of the page of the textbook is bigger than the footprints.

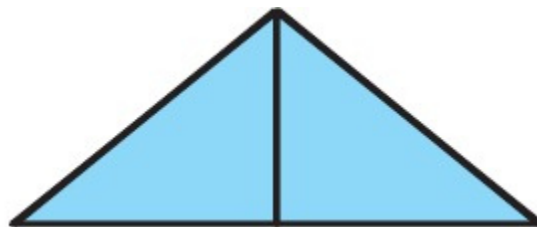
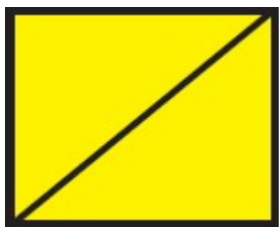
b) Which has the smaller area – two five-rupee notes together or a hundred-rupee note?

Solution:-A hundred rupee note has the smaller area.

c) Look at a 10 rupee note. Is its area more than hundred square cm?

Solution:-No, the area of a 10 rupee note is not more than hundred square cm.

d) Is the area of the blue shape more than the area of the yellow shape? Why?

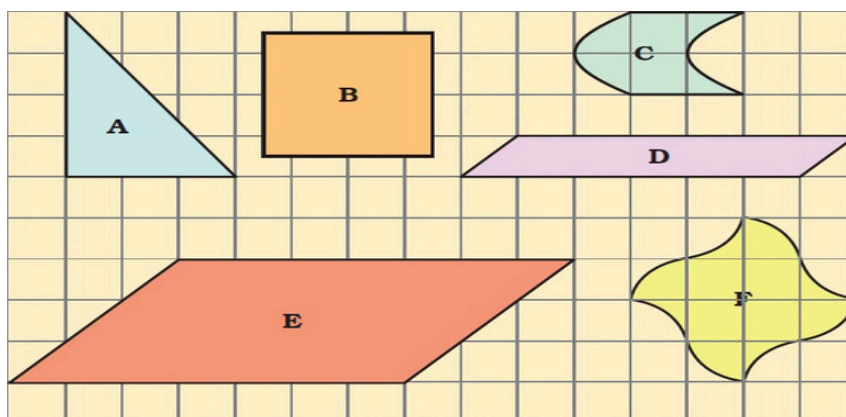


Solution:-No, from the given image, we can say that the area of the blue shape is equal to the area of the yellow shape. Because the yellow and blue shaped figures are divided into two triangles of equal areas.

e) Is the perimeter of the yellow shape more than the perimeter of the blue shape? Why?

Solution:-No, the perimeter of the yellow shape is less than the perimeter of the blue shape. With the help of a ruler, we can find that the length of the boundary of the blue shape is more than the length of the boundary of the yellow shape.

5. Write the area (in square cm) of the shapes below.



Solution:-

Area of triangle fig. A =  $\frac{1}{2} \times \text{base} \times \text{height}$

$$= \frac{1}{2} \times 3 \times 4$$

$$= \frac{1}{2} \times 12$$

$$= 6 \text{ cm}^2$$

Area of square fig. B = 4 complete square + 8 half squares + 4 quarter squares  
 $= 4 + (\frac{1}{2} \times 8) + (\frac{1}{4} \times 4)$   
 $= 4 + 4 + 1$   
 $= 9 \text{ cm}^2$

Area of fig. C = 2 complete square + 4 half square  
 $= 2 + (\frac{1}{2} \times 4)$   
 $= 2 + 2$   
 $= 4 \text{ cm}^2$

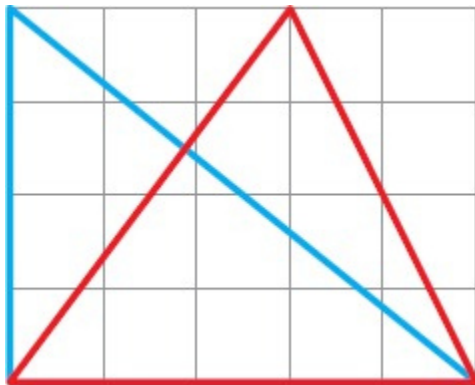
Area of fig. D = 5 complete square + 2 half square  
 $= 5 + (\frac{1}{2} \times 2)$   
 $= 5 + 1$   
 $= 6 \text{ cm}^2$

Area of fig. E = 18 complete square + 6 half square  
 $= 18 + (\frac{1}{2} \times 6)$   
 $= 18 + 3$   
 $= 21 \text{ cm}^2$

Area of fig. F = 4 complete square + 4 more than half + 4 quarter square  
 $= 4 + (\frac{3}{4} \times 4) + (\frac{1}{4} \times 4)$   
 $= 4 + 3 + 1$   
 $= 8 \text{ cm}^2$

6. The blue triangle is half of the big rectangle. The area of the big rectangle is 20 square cm.

So the area of the blue triangle is \_\_\_\_\_ square cm.



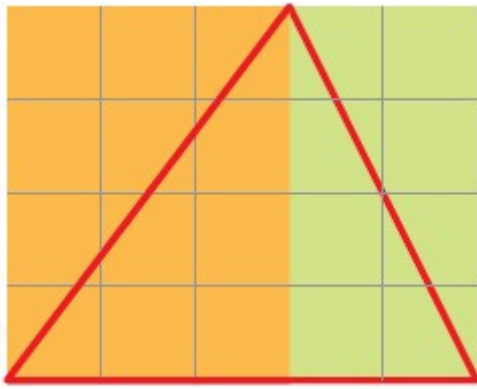
Solution:-

From the question,

The area of the big rectangle is 20 cm<sup>2</sup>.

The area of the blue triangle is half of the big rectangle =  $20/2$   
 $= 10 \text{ cm}^2$

7. In the figure below, there are two halves of two different rectangles.



Find the area of the two rectangles in the figure. What is the area of the red triangle? Explain.

From the figure, we can say that,

The orange rectangle contains 12 squares

So, the area of the orange rectangle =  $12 \text{ cm}^2$

Then, the green rectangle contains 8 squares

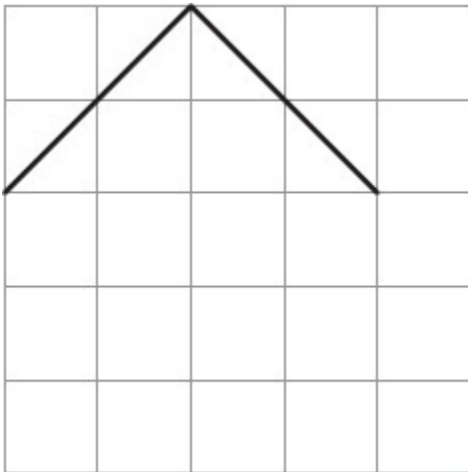
So, the area of the green rectangle =  $8 \text{ cm}^2$

Now, the area of the orange portion of the triangle =  $12/2 = 6 \text{ cm}^2$

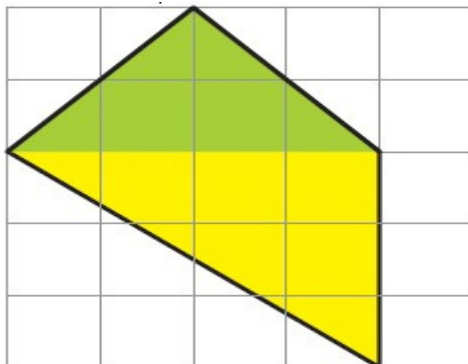
The area of the yellow portion of the triangle =  $8/2 = 4 \text{ cm}^2$

Therefore, the area of the red triangle =  $6 + 4$   
 $= 10 \text{ cm}^2$

8. Suruchi drew two sides of a shape. She asked Asif to complete the shape with two more sides so that its area was 10 square cm.



He completed the shape like the following:



(i) Is he correct?



Solution:-

Yes, he is correct.

(ii) Explain how the green area is 4 square cm, and the yellow area is 6 square cm.

Solution:-

Green area = 2 complete square + 4 half square

$$= 2 + (\frac{1}{2} \times 4)$$

$$= 2 + 2$$

$$= 4 \text{ cm}^2$$

Yellow area = 3 complete square + 2 more than half + 2 half filled

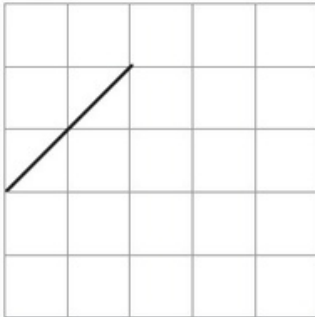
$$= 3 + 2 + (\frac{1}{2} \times 2)$$

$$= 3 + 2 + 1$$

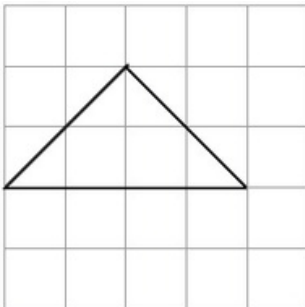
$$= 6 \text{ cm}^2$$

### Practice Questions

1. This is one of the sides of a shape. Complete the shape so that its area is 4 square cm.



Solution:-



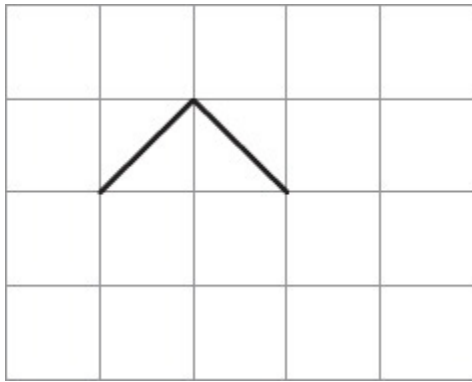
The completed shape = 2 complete square + 4 half square

$$= 2 + (\frac{1}{2} \times 4)$$

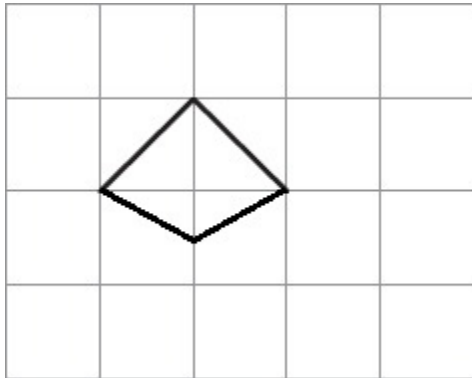
$$= 2 + 2$$

$$= 4 \text{ cm}^2$$

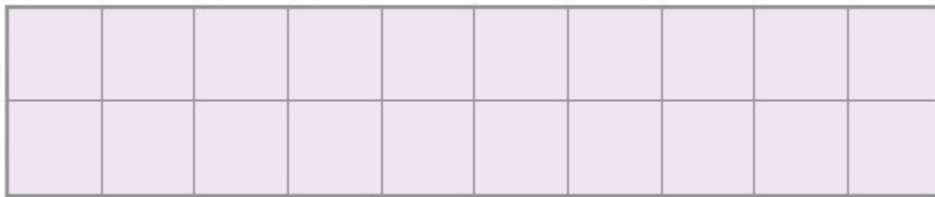
2. Two sides of a shape are drawn here. Complete the shape by drawing two more sides so that its area is less than 2 square cm.



Solution:-

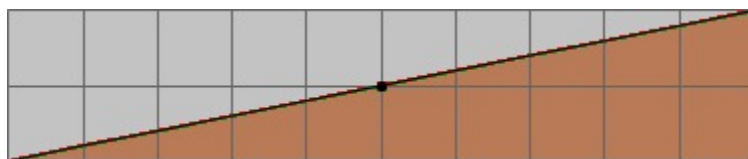


3. Here is a rectangle with an area of 20 square cm.



a) Draw one straight line in this rectangle to divide it into two equal triangles. What is the area of each of the triangles?

Solution:-



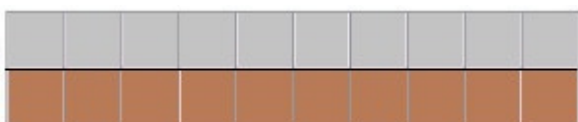
$$\begin{aligned} \text{Area of rectangle} &= 10 \times 2 \\ &= 20 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Then, the area of two equal triangles} &= 20/2 \\ &= 10 \text{ cm}^2 \end{aligned}$$

Because it is given that a straight line divides the rectangle into two equal triangles.

b) Draw one straight line in this rectangle to divide it into two equal rectangles. What is the area of each of the smaller rectangles?

Solution:-



Area of big rectangle = 10 cm<sup>2</sup>

The area of each of the smaller rectangles =  $20/2$   
= 10 cm<sup>2</sup>

c) Draw two straight lines in this rectangle to divide it into one rectangle and two equal triangles.

Solution:-



(i) What is the area of the rectangle?

Solution:-

Area of rectangle = length  $\times$  breadth

$$= 2 \times 5$$

$$= 10 \text{ cm}^2$$

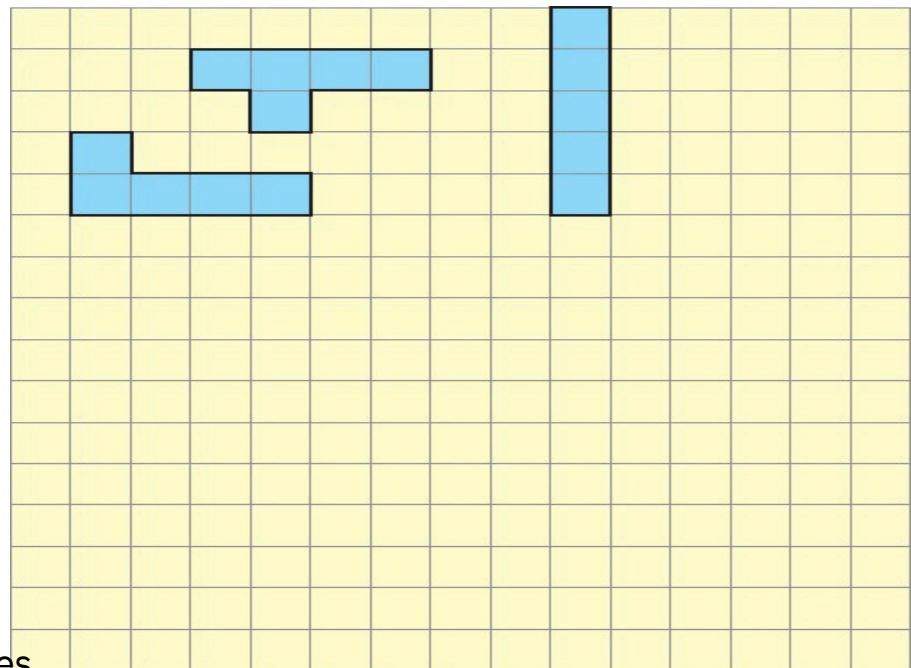
(ii) What is the area of each of the triangles?

Solution:-

Area of each triangle =  $\frac{1}{2} \times$  area of the smaller rectangle

$$= \frac{1}{2} \times 10$$

$$= 5 \text{ cm}^2$$

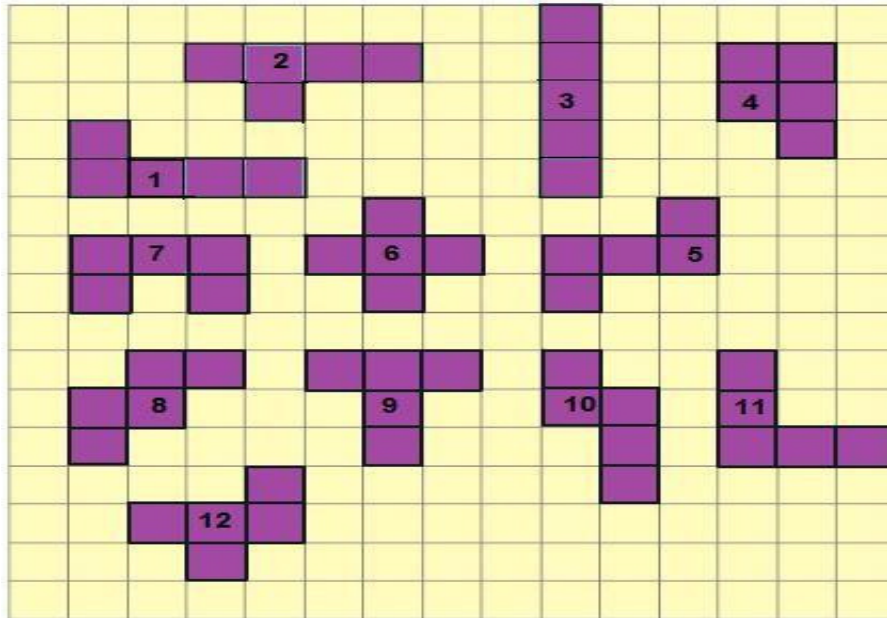


4. Puzzle with five squares

a) How many different shapes can you draw?

Solution:-

Using 5 squares, I can draw 12 shapes, as shown below:



b) Which shape has the longest perimeter? How much?

Solution:-Shape 4 has the smallest perimeter out of the 12 shapes; the rest of the shapes have the same perimeter, i.e. =  $1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 12$  cm

c) Which shape has the shortest perimeter? How much?

Solution:-

Out of 12 shapes, 4 have the smallest perimeter.

i.e. =  $1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 10$  cm.

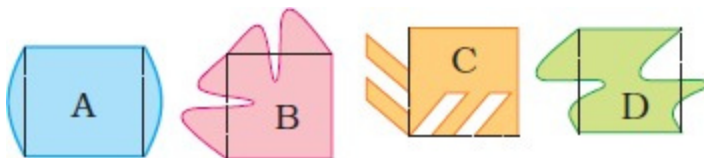
d) What is the area of the shapes (in square cm)?

Solution:-

There are 12 shapes, and each shape has five complete squares. The area of 1 square is equal to  $1 \text{ cm}^2$ .

So, the area of each shape =  $1 \times 5 = 5 \text{ cm}^2$

5. Ziri tried to make some tiles. She started with a square of 2 cm side and made shapes like the following:



Look at them carefully and find out:

(i) Which of these shapes will tile a floor (without any gaps)?

Solution:-

By observing the given figure, shape C and shape D will tile a floor without any gaps.