◆ **Observe and understand :**

**Example 1 :**

**(1)** Add : 3 hours and 55 minutes and 2 hours 15 minutes :

|  | 5 hours 70 minutes means, |
|---|---|
| 3 *hrs* 55 *min* | 70 minutes = 60 minutes + 10 minutes |
| + 2 *hrs* 15 *min* | = 1 hour and 10 minutes |
| 5 *hrs* 70 *min* | **5 hours and 1 hour 10 minutes means** |
|  | **6 hours and 10 minutes** |

**(2)** Add : 2 hours and 45 minutes and 4 hours 34 minutes :

|  | 6 hours 79 minutes means, |
|---|---|
| 2 *hrs* 45 *min* | 79 minutes = 60 minutes + 19 minutes |
| + 4 *hrs* 34 *min* | = 1 hour and 19 minutes |
| 6 *hrs* 79 *min* | **6 hours and 1 hour 19 minutes means** |
|  | **7 hours and 19 minutes** |

**(3)** Add : 6 hours and 30 minutes, 3 hours 40 minutes and 8 hours 55 minutes :

|  | 17 hours 125 minutes means, |
|---|---|
| 6 *hrs* 30 *min* | 125 minutes = 120 minutes + 5 minutes |
| + 3 *hrs* 40 *min* | = 2 hours and 5 minutes |
| + 8 *hrs* 55 *min* | **17 hours and 2 hours minutes means,** |
| 17 *hrs* 125 *min* | **19 hours and 5 minutes** |

**Practice 2**

1. **Add the following :**

(1) 2 hours 25 minutes and 3 hours 45 minutes

(2) 4 hours 45 minutes and 1 hour 55 minutes

(3) 8 hours 38 minutes, 4 hours 55 minutes and 7 hours 40 minutes

(4) 5 hours 25 minutes, 3 hours 45 minutes and 7 hours 30 minutes

(5) 3 hours 10 minutes, 5 hours 15 minutes and 2 hours 50 minutes

◆ **Observe and understand :**

**Example 2 :**

(1) Pankajbhai read a story book from 2:40 to 5:15 in the afternoon. Calculate the time Pankajbhai spent in reading ? (One can get the duration by subtracting the time of beginning from time of completion.)

| | 4 hrs | 60 mins | |
|---|---|---|---|
| | 5 hrs | 15 mins | 75 mins |
| − | 2 hrs | 40 mins | |
| | 2 hrs | 35 mins | |

We can't subtract 40 minutes from 15 minutes, so we subtract 1 hour from 5 hours and place 4 hours above it. Adding 60 minutes to 15 minutes we get 75 minutes. When we subtract 40 minutes from 75 minutes, 15 minutes remain.

(2) Students of standard 4 visited Gram Panchayat from 11:30 to 12:25. How much time did they spend for the visit of Gram Panchayat ?

| | hrs. | mins. | |
|---|---|---|---|
| | 11 | 60 | 85 |
| | 12 | 25 | |
| − | 11 | 30 | |
| | 00 | 55 | |

30 minutes can't be subtracted from 25 minutes. So, 1 hour is subtracted from 12 hours and its 60 minutes is added to 25 minutes we get 85 minutes. If we subtract 1 hour from 12 hours, 11 hours remain. If we subtract 30 minutes from 85 minutes, 55 minutes remain.

(3) If Alkaben cooked the food from 9:35 to 11:15, then how much time did she spend for cooking ?

| | hrs. | mins. | |
|---|---|---|---|
| | 10 | 60 | 75 |
| | 11 | 15 | |
| − | 9 | 35 | |
| | 1 | 40 | |

35 minutes can't be subtracted from 15 minutes. So, 1 hour is subtracted from 11 hours and its 60 minutes is added to 15 minutes we get 75 minutes. If we subtract 1 hour from 11 hours, 10 hours remain. If we subtract 35 minutes from 75 minutes, 40 minutes remain.

## Practice 3

1. **Solve the following sums :**

   (1) Anisha did exercise work of mathematics from 6:45 to 7:10 in the evening. How long did she do the exercise work ?

   (2) The prayer assembly of a school is held from 10:50 to 11:20. Calculate the total time of the prayer assembly.

   (3) The prayer assembly of a school is held from 7:10 to 7:25. Calculate the total time of the prayer assembly.

2. **See the timetable and write answers :**

| Time | Monday | Tuesday | Wednesday | Thursday | Friday | Time | Saturday |
|------|--------|---------|-----------|----------|--------|------|----------|
| 11:05 to 11:45 | English | English | English | English | English | 7:30 to 8:10 | P.E. |
| 11:45 to 12:20 | English | English | English | English | English | 8:10 to 8:50 | English |
| 12:20 to 1:05 | Mathematics | Mathematics | Mathematics | Mathematics | Mathematics | 8:50 to 9:30 | Mathematics |
| 1:05 to 1:40 | Mathematics | Mathematics | Mathematics | Mathematics | Mathematics | | Environment |
| 1:40 to 2:30 | Recess | | | | | 9:30 to 9:50 | |
| 2:30 to 3:05 | Environment | Environment | Environment | Environment | Environment | 9:50 to 10:25 | Mathematics |
| 3:05 to 3:40 | Environment | Environment | Environment | Environment | Environment | 10:25 to 11:00 | Mathematics |
| 3:40 to 4:25 | English | Music | Drawing | Art Edu. | P.E. | | |
| 4:25 to 5:00 | Art Edu. | Music | P.E. | Oral reading | Drawing | | |

   (1) How much time do the Mathematics classes take on Tuesday ?

   ....................

   (2) What is the total duration of English class from Monday to Saturday ?

   ....................

   (3) What is the duration of oral reading class ?    ....................

   (4) How much time is kept for recess on a day from Monday to Friday ?

   ....................

   (5) What is the total duration of recess from Monday to Friday ?

   ....................

(6) How much time is allotted for physical education on Friday ?

.....................

(7) How much time is allotted for music period in a week ? ...................

## Practice 4

**Study the Railway Time-table and answer the following questions :**



| Train | | Travelling | Departure | Arrival | Runs |
| Number | Name | from and to | Time | Time | on |
|---|---|---|---|---|---|
| 22971 | Bhavnagar Express | Ahmedabad to Bhavnagar | 05:45 | 08:30 | Mon, Tue, Thu, Fri, Sat |
| 25636 | Okha Express | Ahmedabad to Okha | 16:15 | 22:30 | Monday |
| 26614 | Rajkot Express | Ahmedabad to Rajkot | 14:40 | 16:30 | Wednesday |
| 29017 | Gujarat Express | Ahmedabad to Mumbai | 14:55 | 00:15 | Daily |
| 29168 | Sabarmati Express | Ahmedabad to Delhi | 05:25 | 20:00 | Tue, wed |
| 27579 | Haridwar Express | Ahmedabad to Haridwar | 07:15 | 23:30 | Thu, Fri, Sat |

(1) How much time will the Rajkot Express take to reach Rajkot from Ahmedabad ?                    ...................

(2) How much time will the Bhavnagar Express take to reach Bhavnagar from Ahmedabad ?                    ...................

(3) How much time will the Gujarat Express take to reach Mumbai from Ahmedabad ?                    ...................

(4) How much time will the Sabarmati Express take to reach Delhi ?                    ...................

(5) How much time will the Train No. 25636 take to reach Okha from Ahmedabad ?                    ...................

(6) How much time will the Haridwar Express take to reach Haridwar from Ahmedabad ?                    ...................

## Practice 5

**Study the Aeroplane Time-Table and fill in the blanks in the table :**

| Flight | | Departure | Departure | Destination | Arrival | Duration |
|---|---|---|---|---|---|---|
| Number | Name | Place | Time | | Time | |
| 541 | Air India | Surat | 9:30 | Ahmedabad | 10:15 | .......... |
| 3446 | Indigo | Bhavnagar | 10:15 | Ahmedabad | 10:55 | .......... |
| 101 | Go-Air | Ahmedabad | 12:30 | Jamnagar | 1:45 | .......... |
| 3525 | Jet Airways | Rajkot | 08:20 | Ahmedabad | 9:10 | .......... |
| 4449 | Deccan 360 | Bhuj | 15:00 | Ahmedabad | 16:35 | .......... |

## Exercise

1. **Fill in the following blanks :**

(1) 6 hours = ................... minutes

(2) 4 hours 45 minutes = ................... minutes

(3) 3 hours 20 minutes = ................... minutes

(4) 430 minutes = ................... hours and ................... minutes

(5) 335 minutes = ................... hours and ................... minutes

## 2. Add :

(1) 1 hour 33 minutes and 3 hours 52 minutes

(2) 2 hours 20 minutes + 2 hours 45 minutes + 6 hours 18 minutes

(3) 9 hours 30 minutes + 4 hours 12 minutes + 7 hours 36 minutes

(4) 8 hours 20 minutes + 1 hour 10 minutes + 6 hours 15 minutes

## 3. Solve :

(1) Children of Anupam Primary School start at 7:45 O'clock and reach the picnic spot at 9:30 in morning, so how much time do they take to reach the picnic spot ?

(2) A movie began at 1:45 O'clock and ended at 3:45 O'clock. For how much time did the movie run ?

(3) A birthday party began at 7:25 in the evening and ended at 10:15 at night. How long did the birthday party take ?

(4) Vasudev helped his father in his work from 7:30 O'clock to 9:45 O'clock in the morning. How long did he help his father ?

(5) Children of standard 4 visited the zoo in Vadodara from 10:45 O'clock to 11:30 O'clock. How much time did they spend at the zoo ?

## Answers

### Practice 1

**1.** (1) 1 hour 30 minutes      (2) 150 minutes      (5) 30 minutes

**2.** (1) 2 hours 40 minutes      (2) 3 hours 30 minutes

     (3) 4 hours 15 minutes      (4) 200 minutes      (5) 340 minutes

     (6) 150 minutes

### Practice 2

**1.** (1) 6 hours 10 minutes      (2) 6 hours 40 minutes

     (3) 21 hours 13 minutes      (4) 16 hours 40 minutes

     (5) 11 hours 15 minutes

### Practice 3

**1.** (1) 25 minutes    (2) 30 minutes    (3) 15 minutes

**2.** (1) 80 minutes or 1 hour 20 minutes

     (2) 460 minutes or 7 hours 40 minutes

     (3) 35 minutes    (4) 50 minutes    (5) 250 minutes or 4 hours 10 minutes

     (6) 45 minutes    (7) 80 minutes or 1 hour 20 minutes

### Practice 4

**1.** (1) 110 minutes or 1 hour 50 minutes

     (2) 165 minutes or 2 hours 45 minutes

(3) 9 hours 20 minutes  (4) 14 hours 35 minutes

(5) 6 hours 15 minutes  (6) 16 hours 15 minutes

## Practice 5

**1.** (1) 45 minutes  (2) 40 minutes  (3) 1 hour 15 minutes

(4) 50 minutes  (5) 1 hour 35 minutes

## Exercise

**1.** (1) 360 minutes  (2) 285 minutes  (3) 200 minutes

(4) 7 hours 10 minutes  (5) 5 hours 35 minutes

**2.** (1) 5 hours 25 minutes  (2) 11 hours 23 minutes

(3) 21 hours 18 minutes  (4) 15 hours 45 minutes

**3.** (1) 1 hour 45 minutes  (2) 2 hours  (3) 2 hours 50 minutes

(4) 2 hours 15 minutes  (5) 45 minutes

◆

# 7 | Line, Line-Segment, Ray

**Let us learn something new :**

**Point :**

♦ **Activity 1 :**

Sharpen a pencil and mark some dots in your notebook.

These dots give an idea of point. These dots are the pictures of points. Such points are denoted by English capital alphabets.

For example,

• Z          • P          • C

• A                          • B
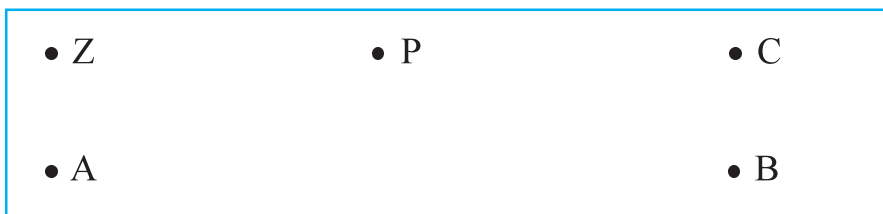
The points shown in the above box are different. Two different points are called **Distinct Points.**

**Line-segment :**

A figure obtained by joining any such two distinct points with a ruler is called **Line-segment.** See the following example.

For example,

Here is a line segment AB.

A━━━━━━━━━━━━━B

♦   **Activity 2 :**
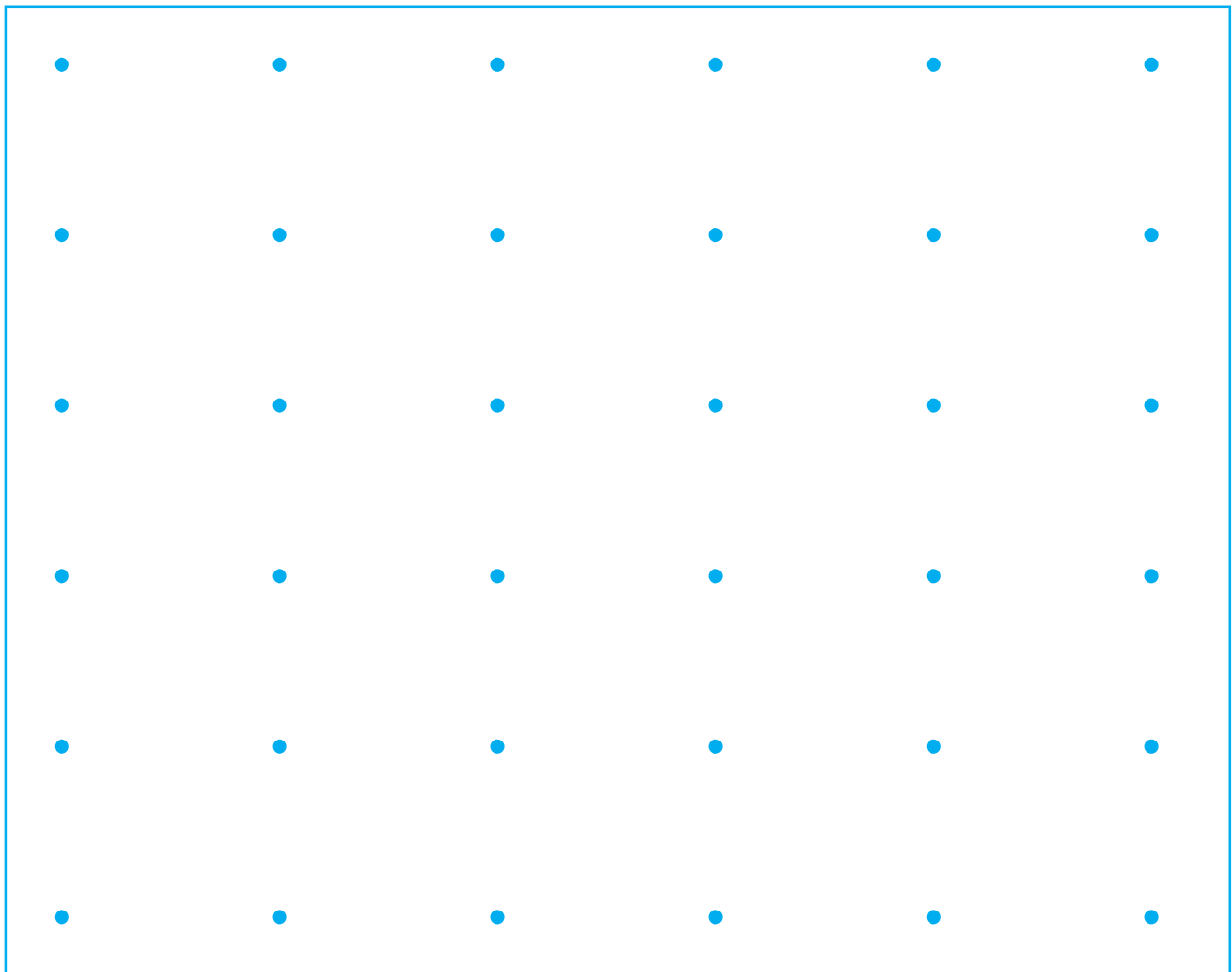
Make triangle, square, rectangle, pentagon and hexagon by joining points given in above rectangle.

**Fill in the following blanks :**

(1)  How many line-segments did you draw to make a triangle ?   .............

(2)  How many line-segments did you draw to make a square ?    .............

(3)  How many line-segments did you draw to make a pentagon ? .............

(4)  How many line-segments did you draw to make a hexagon ?  .............

(5)  How many line-segments did you draw to make a rectangle ? .............

♦ **Activity 3 :**

Draw a figure as shown below with the help a ruler in the rectangle given below it and fill in the colours of your choice :
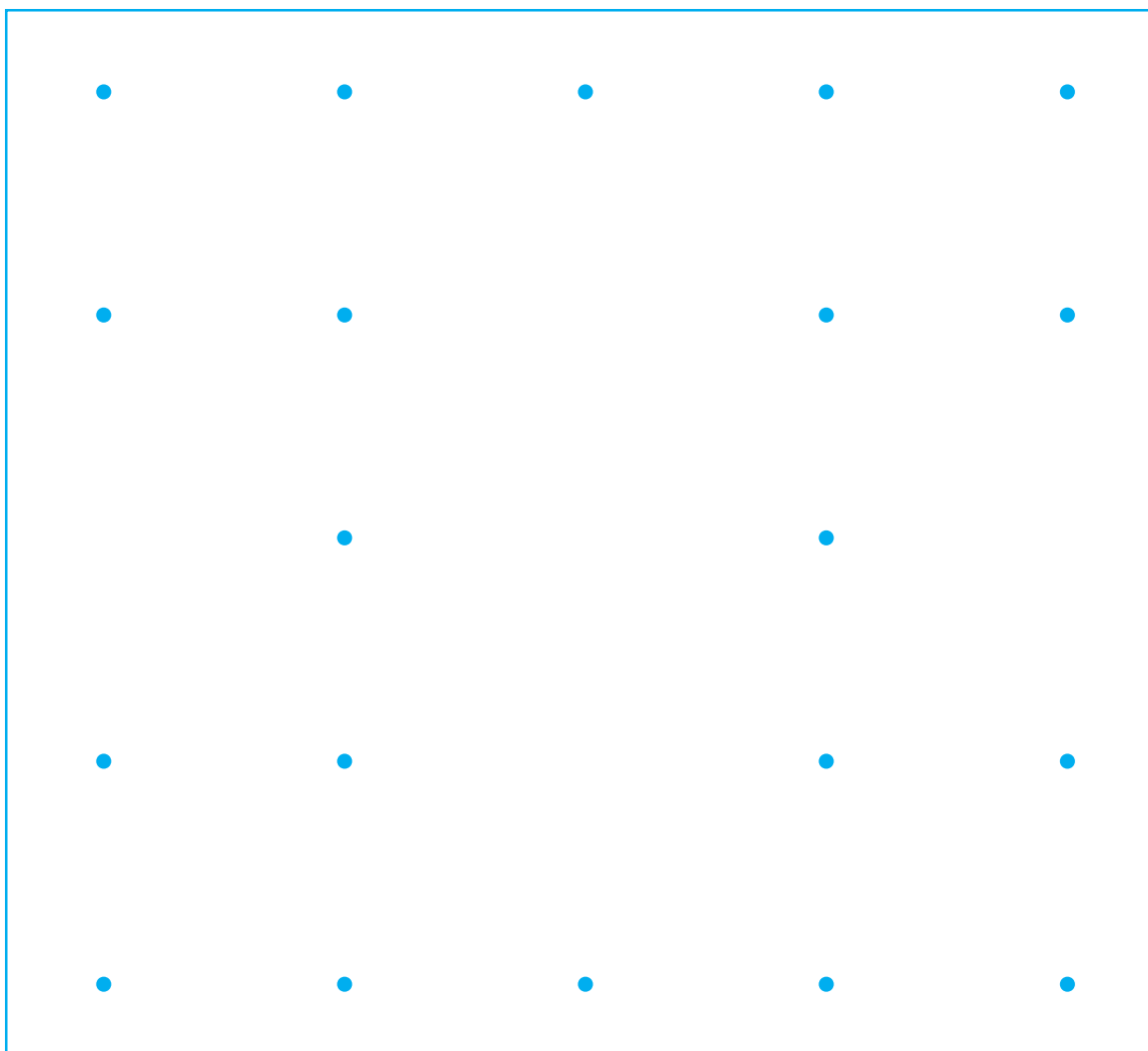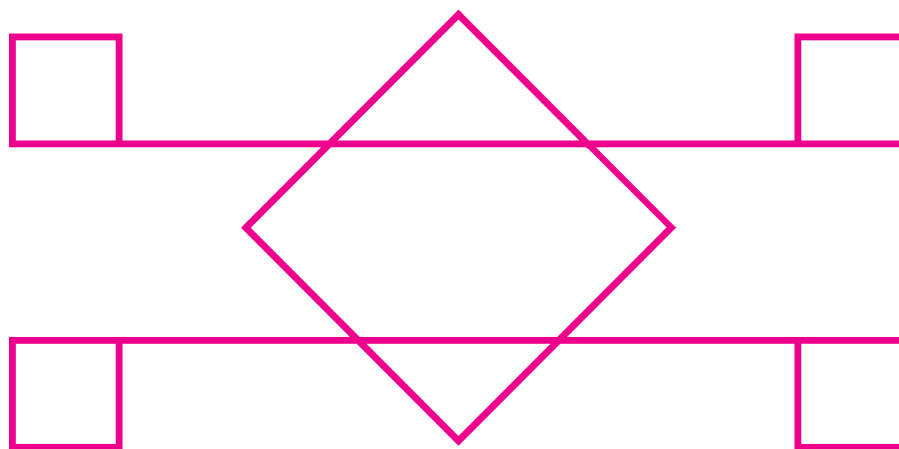
Children, you must have enjoyed Activities 2 and 3, haven't you ? You have drawn different line-segments in these activities. Remember the following points about line-segments.

P                                                   Q

- Points P and Q are the end-points of line-segment PQ.

  So, every line-segment has two end-points.

- Line-segment PQ is denoted as $\overline{PQ}$ symbolically.

- The name of a line-segment is determined by its end-points.

  As for example, $\overline{AB}$ is read as line-segment AB.

  $\overline{AB}$ and $\overline{BA}$ are same line-segments.

♦ **Think and do :**

(1) Draw a line-segment, name it in different ways and read.

❏ **Measuring a line-segment :**

♦ **Activity 4 :**

Measure the length of any one edge of a table, notebook, mathematics textbook, geometry box, pencil, duster etc. with the help of a ruler and write its length in the blanks given below :

| | | | |
|---|---|---|---|
| Note-book | .................... cm | Geometry box | .................... cm |
| Pencil | .................... cm | Table | .................... cm |
| Duster | .................... cm | Textbook | .................... cm |

♦ **Activity 5 :**

Measure the sides of the triangle and square given in the figure with the help of a ruler and write the measurements in the blanks given below :

Side 1

Side 1

Side 2

Side 3

Side 4

Side 2

Side 3
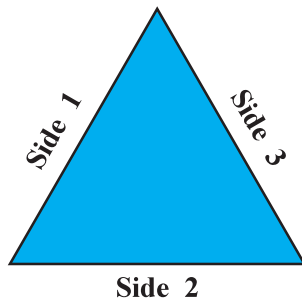
**Triangle**
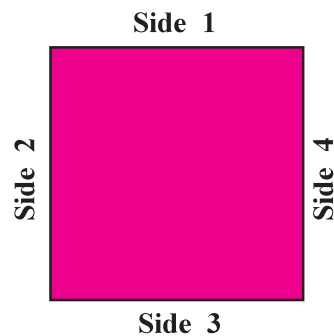
**Square**

| | |
|---|---|
| Side 1 ................... *cm* | Side 1 ................... *cm* |
| Side 2 ................... *cm* | Side 2 ................... *cm* |
| Side 3 ................... *cm* | Side 3 ................... *cm* |
| | Side 4 ................... *cm* |

The sides measured by you in the above activity are the lengths of line-segments.

X                    Y

Here, the length of $\overline{XY}$ is 5 *cm*. It is written as XY = 5 *cm*.

**Practice 1**

♦ **Measure the lengths of the line-segments given below with the help of a ruler and write its measurements :**

(1)   A                    B          AB = .......... *cm*

(2)   P                    Q          PQ = .......... *cm*

(3)   C                    D          CD = .......... *cm*

(4) $\bullet$————————————$\bullet$     RS = .......... cm
R                                      S

(5) $\bullet$————————————$\bullet$     XY = .......... cm
X                              Y

❑ **Drawing a line-segment with the help of a ruler :**

◆ **Activity 6 :**



Put a point against the mark zero (0) of a ruler. Put another point against the mark corresponding to 7 of the ruler. Draw a line-segment joining the two points. Denote the two points by A and B respectively. Thus, you will get a line-segment of length 7 *cm*.

◆ **Activity 7 :**

Draw a line-segment joining the given points with the help of a ruler and measure it :

(1)  $\bullet$     $\bullet$
      A          B

(2)  $\bullet$              $\bullet$
      C              D

(3)  $\bullet$              $\bullet$
      E              F

**Questions :**

(1) Which line-segment has the least measurement ?

(2) What is the measurement of $\overline{CD}$ ?

(3) What is the measurement of $\overline{EF}$ ?

**Practice 2**

◆ **Draw the line-segment of given measure with the help of a scale :**

(1) 4 *cm*   (2) 3 *cm*   (3) 2 *cm*   (4) 6 *cm*   (5) 5 *cm*

❏ **Line :**



Children, here (above) $\overline{PQ}$ is given. Suppose that, if this line-segment is extended endlessly in the direction from P to Q, can it be shown in the note-book ?



Now, the line-segment is extended infinitely in the direction from P to Q, so it can not be shown in the note-book completely.

Similarly what will happen if this line-segment is extended infinitely in the direction from Q to P ?



Now, if the line segment PQ extends endlessly in both the directions, its end-points cannot be obtained. To show this in a note-book, we shall draw arrows on both the sides.



The figure above shows line PQ. A line extending endlessly on both the sides cannot be measured. Line does not have any end-points. Symbolically, it is denoted as $\overleftrightarrow{PQ}$. It is also called $\overleftrightarrow{QP}$.

It is read as line PQ or line QP. The line can also be denoted as line '*l*' and it is read as line *l*. In this way, a line can be denoted by a single small letter like *l, m, t* etc. In the above figure $\overleftrightarrow{PQ} = l$ is shown, so it is also known as line *l*.

- At least two distinct points are required to determine a line.

- Infinite number of points lie on a line.

- Infinite number of lines pass through one point.

- Line-segment is a part of line.

◆ **Activity 8 :**

Draw a line containing any two points given in the following figures. Try to draw maximum number of lines :

A •      B •

C •

D •

**(A)**

           A •

B •

       C •

     D •

**(B)**

A •      B •

C •

**(C)**

A •

          B •
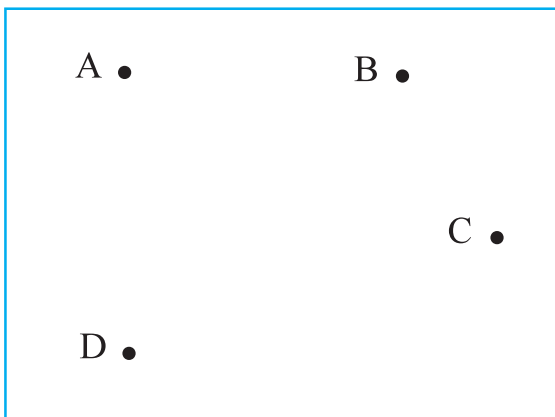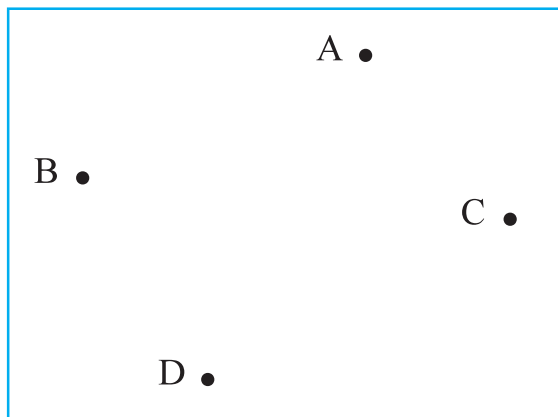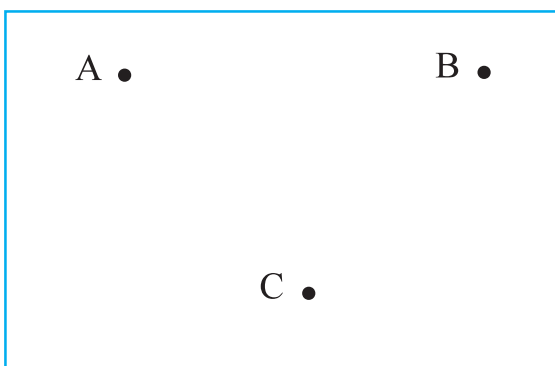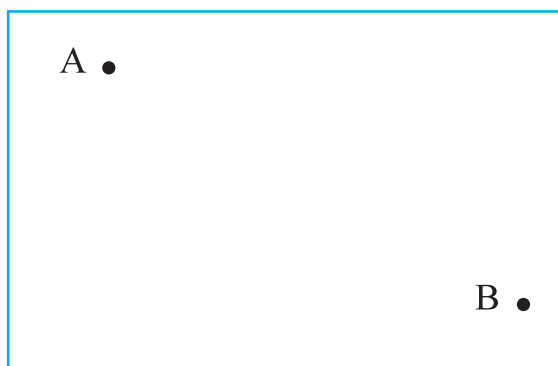
**(D)**

Draw maximum number of lines passing through the point A given in the figure below.

A •
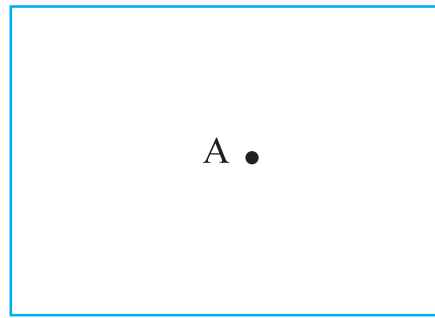
(E)

Answer the following questions based on the above activity :

(1) In which figure could you draw a maximum number of lines? Why?

(2) In which figure could only one line be drawn ?

(3) How many lines could be drawn passing through the points A, B and C ?

**Think and do :**

Mark two distinct points in your note-book and draw a line passing through them. Give a name of your choice.

❏ **Ray :**

◆ **Activity 9 :**

Study the following picture :

North

Munpur

West

Himmatnagar

Kadoli          Sapteshwar

East

South
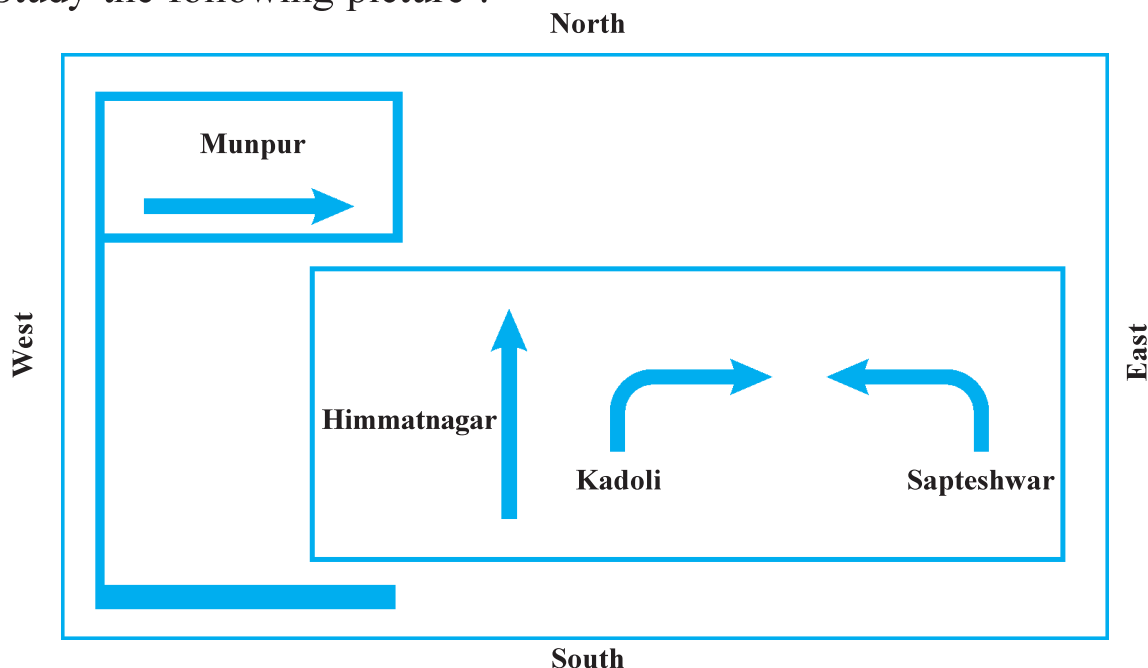
(1) Where have you seen the boards as given above ? Make a list of five names.

(2) What does an arrow indicate in the above picture ?

(3) In which direction should we go to go to Himmatnagar ?

(4) In which direction should we go for Kadoli ?

(5) In which direction is an arrow indicated to go to Sapteshwar ?

♦ **Activity 10 :**

**Think and do :**
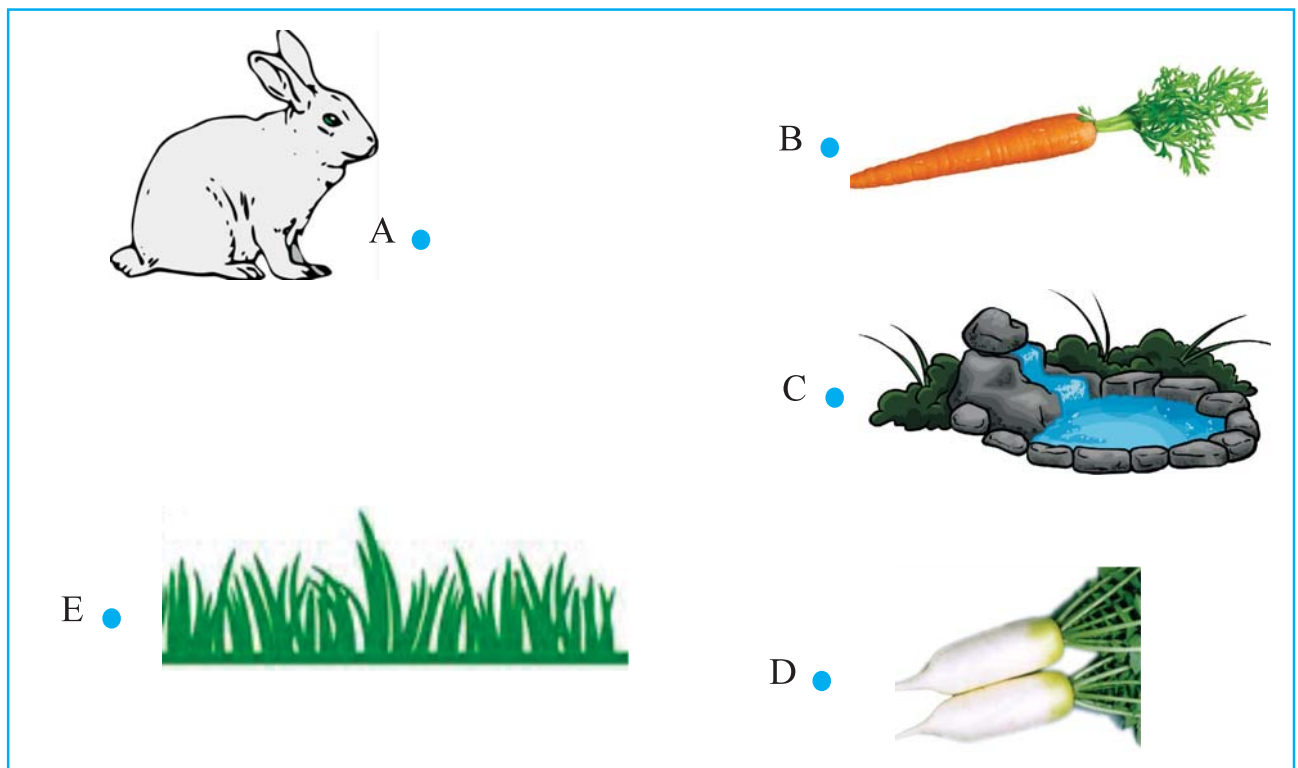


(1) Draw an arrow showing the path to Rabbit to eat radish.

(2) Draw an arrow showing the path to Rabbit to eat grass.

(3) Draw an arrow showing the path to Rabbit to eat carrot.

(4) Draw an arrow showing the path to Rabbit to drink water.

In above activity, you have drawn various arrows showing direction to various things to the Rabbit. All the arrows emerge from the point where Rabbit is. So, this point is said to be the initial point of all the arrows. This is also called the origin of the arrow.

**Think and Do :**

- Draw an arrow with the help of a ruler taking A as its origin and passing through H.
- Draw an arrow with the help of a ruler taking C as its origin and passing through G.
- Draw an arrow with the help of a ruler taking D as its origin and passing through F.

A •    B •    C •    D •

E •    F •    G •    H •
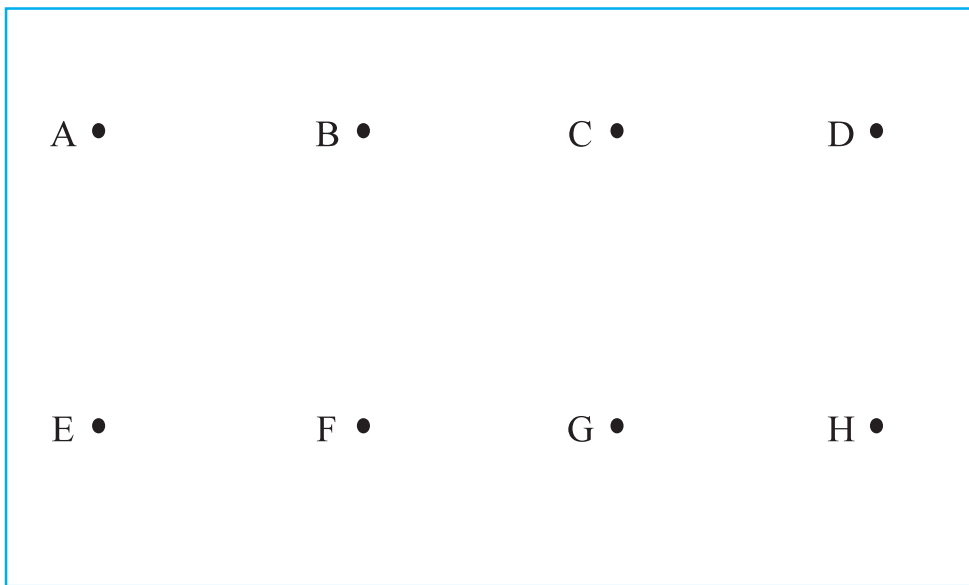
♦ **Study the following figure :**

A                                    B

This arrow like figure is of a ray. Symbolically, it is denoted as $\overrightarrow{AB}$ and read as ray AB. The point from which a ray emerges is called an initial point or origin of the ray. A ray is a part of a line. A ray has only one end-point.

**Distinct Rays :**

(1)



Here, initial point and direction of $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are same. So, $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are same rays and not distinct.

(2) Here, initial point A of $\overrightarrow{AB}$ and $\overrightarrow{AC}$ is same, but their directions are not same. So, $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are distinct Rays.



(3)
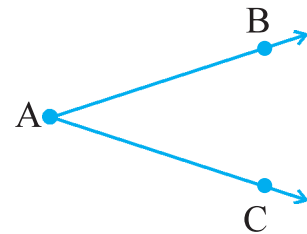


Here, initial point A of $\overrightarrow{AB}$ and $\overrightarrow{AC}$ is same and direction of both the rays are opposite. So, $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are distinct Rays.

(4)



Here, direction of $\overrightarrow{AB}$ and $\overrightarrow{BC}$ are same but their initial points are not same. So, $\overrightarrow{AC}$ and $\overrightarrow{BC}$ are distinct Rays.

(5)
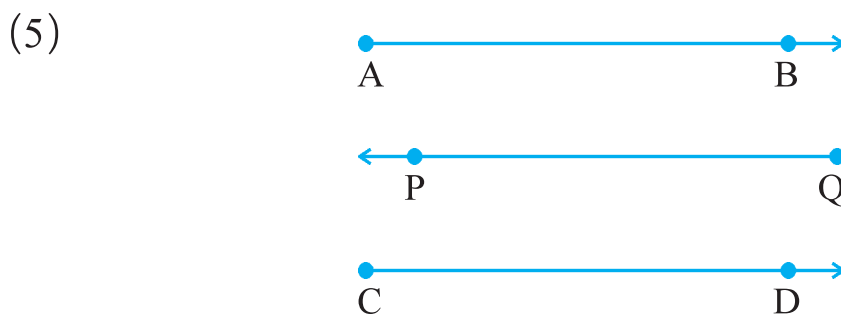


Here, initial point and direction of $\overrightarrow{AB}$ and $\overrightarrow{QP}$ are distinct. So, they are distinct Rays. Similarly, $\overrightarrow{AB}$ and $\overrightarrow{CD}$ are also distinct Rays.

◆ **Activity 11 :**

Study the following picture and answer the following questions :
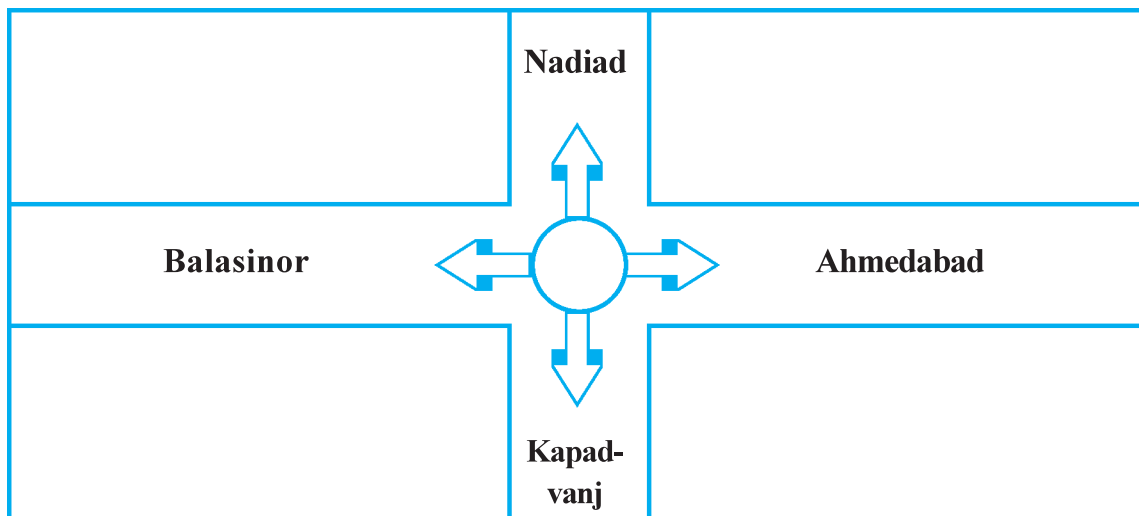


(1) Which place is located in the direction opposite to Ahmedabad ?

(2) Which place is located in the direction opposite to Nadiad ?

**Think and do :**

Draw $\overrightarrow{OA}$, $\overrightarrow{OB}$, $\overrightarrow{OC}$ and $\overrightarrow{OD}$ with the help of ruler.
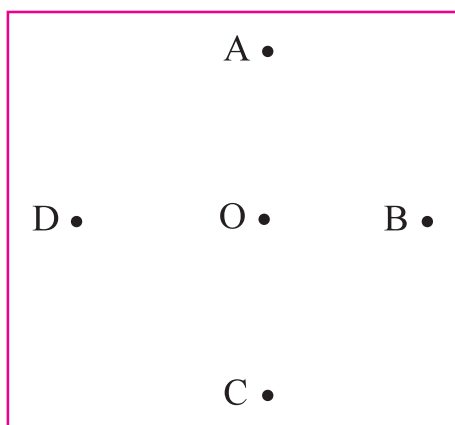


(1) Which is the initial point of $\overrightarrow{OB}$ ?

(2) Which is the initial point of $\overrightarrow{OD}$ ?

(3) How is the mutual direction of $\overrightarrow{OB}$ and $\overrightarrow{OD}$ ?

(4) Which line is formed by joining $\overrightarrow{OA}$ and $\overrightarrow{OC}$ ?

**Opposite Ray :** If two distinct rays having same initial point determine a line, then they are called opposite rays.

**Think and do :** Find out the pairs of opposite rays from the above figure.

## Exercise

1. **State whether the following statements are true or false :**

   (1) A line-segment has three end-points.

   (2) A line-segment AB is denoted as $\overline{AB}$.

   (3) Many lines can pass through one point.

   (4) A ray has two initial points.

   (5) Line-segment and rays are parts of a line.

2. **Draw the line-segments of given measure with the help of a scale :**

   (1) 9 *cm*      (2) 8 *cm*

3. **Measure the length of the given line-segment and write their measure in the blanks :**

   (1)  A ———————————— B        AB = .......... *cm*

   (2)  P ———————————————— Q        PQ = .......... *cm*

   (3)  X ——————— Y        XY = .......... *cm*

4. **Find out the pairs of opposite rays from the figure given below :**
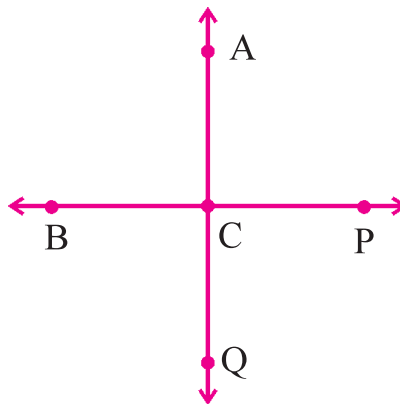
5. **Answer the following questions with the help of the figure :**

A   B   C   D   E   $m$

(1) Write line $m$ in three different ways.

(2) State any three pairs of opposite rays.

(3) Write the names of any three line-segments.

**Answers**

**Exercise**

1. (1) False   (2) True   (3) True   (4) False   (5) True

4. $\overrightarrow{CA}$ and $\overrightarrow{CQ}$, $\overrightarrow{CB}$ and $\overrightarrow{CP}$

# Revision : 2

**1. Do as directed :**

(1) Write 4932 in words.

(2) Write seven thousand five hundred and ninety eight in numbers.

(3) Write the place value of the underlined number in 9475.

(4) 7439 means .......... thousands .......... hundreds .......... tens .......... units.

(5) .......... means 8 thousands 1 hundreds 2 tens 3 units.

(6) The number between 7946 and 7948 is .......... .

(7) .......... is the number immediately preceding 4563.

(8) .......... is the number immediately succeeding 8403.

(9) Put a correct symbol (< or >) in ☐ : 6354 ☐ 4356

(10) Arrange in descending order : 2135, 2130, 2137

(11) Arrange in ascending order : 9475, 6354, 7948

**2. Add :**

(1)
```
  4 3 2 1
+ 2 1 3 5
─────────
```

(2)
```
  3 2 5 8
+ 2 4 2 6
+ 3 2 5 8
─────────
```

(3)
```
  4 3 7 4
+ 1 6 3 8
+ 1 2 0 4
─────────
```

(4)
```
  9 0 0 0
− 5 5 5 5
─────────
```

(5)
```
  9 5 4 7
− 3 9 7 2
─────────
```

(6)
```
  7 4 0 2
− 2 3 6 4
─────────
```

**3.** **Solve the sums :**

(1) 4327 + 3251 − 4529

(2) 8427 − 4257 + 5326

**4.** In a library, there are 7439 story books, 1221 picture-story books and 425 books of nursery rhymes. Total how many books are there in the library ?

**5.** Rakeshbhai bought a TV for ₹ 9835 and Nareshbhai bought a TV for ₹ 8987. Whose TV is costlier, how much ?

**6.** **Fill in the blanks :**

(1)  $12 \times 10$ = ..........

(2)  $17 \times 9$ = ..........

(3)  $100 \times 57$ = ..........

(4)  $6 \times 1000$ = ..........

(5)  There are 13 chocolates in one Jar, so there are .......... chocolates in 6 such jars.

(6)  7 hours = .......... minutes

(7)  4 hours 20 minutes = .......... minutes

(8)  215 minutes = .......... hours .......... minutes

(9)  Number of factors of 13 are .......... , so, it is .......... number.

(10) $12 \times 7 = 84$, so, 84 is a multiple of .......... and .......... .

(11) .......... is a prime number from 21, 23 and 27.

**7. Multiply :**

(1)    1 6
     × 1 5

(2)   3 2 4
     × 3

(3)   5 7 8
     × 1 2

**8.** The cost of a museum ticket is ₹ 50. How much money should be paid for 138 school-children ?

**9.** If a potter sells 155 pots at the rate of ₹ 45 each, then how much money does he earn ?

**10.** Write all the factors of the following numbers :

(1) 6    (2) 14    (3) 36    (4) 48    (5) 34

**11.** Write all the prime numbers occurring between 25 and 35.

**12.** Write first five multiples of following numbers :

(1) 11    (2) 8    (3) 15    (4) 14    (5) 18

**13. Add :**

(1) 5 hours 30 minutes and 3 hours 20 minutes

(2) 4 hours 25 minutes, 2 hours 10 minutes and 7 hours 45 minutes

**14. Subtract :**

(1) 6 hours 20 minutes from 8 hours 15 minutes

(2) 2 hours 45 minutes from 4 hours 30 minutes

**15.** Komal studies mathematics for 1 hour and 10 minutes and environment for 30 minutes. How long does she study in all ?

**16.** Gayatriben teaches in std. 4 from 11:30 to 12:05. How much time does she teach for ?

**17.** Draw the following line-segments and give their names and indicate their symbols :

(1) 4 *cm*     (2) 6 *cm*     (3) 5 *cm*

**18.** Measure the following line-segments :

(1) A━━━━━━━B

(2) P━━━━━━━━━━━━Q

(3) X━━━━━━━━━━━━━━━━━━━━Y

**Answers**
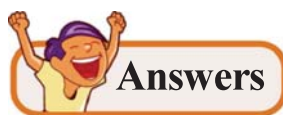
**1.** (1) Four thousand nine hundred and thirty two   (2) 7598   (3) 9000

      (4) 7, 4, 3, 9   (5) 8123   (6) 7947   (7) 4564   (8) 8402

      (9) >   (10) 2137, 2135, 2130   (11) 6354, 7948, 9475

**2.** (1) 6456 (2) 8942 (3) 7216 (4) 3445 (5) 5575 (6) 5038

**3.** (1) 3049   (2) 9497     **4.** 9085

**5.** Rakeshbhai's T.V. is more costlier, ₹ 848

**6.** (1) 120   (2) 153   (3) 5700   (4) 6000   (5) 78   (6) 420   (7) 260

      (8) 3 hours, 35 minutes   (9) 2, Prime number   (10) 12, 7   (11) 23

**7.** (1) 240   (2) 972   (3) 6936     **8.** ₹ 6900

**9.** ₹ 6975

**10.** (1) 1, 2, 3, 6     (2) 1, 2, 7, 14     (3) 1, 2, 3, 4, 6, 9, 12, 18, 36

      (4) 1, 2, 3, 4, 6, 8, 12, 16, 24, 48   (5) 1, 2, 17, 34

**11.** 29, 31

**12.** (1) 11, 22, 33, 44, 55    (2) 8, 16, 24, 32, 40

(3) 15, 30, 45, 60, 75    (4) 14, 28, 42, 56, 70

(5) 18, 36, 54, 72, 90

**13.** (1) 8 hours 50 minutes    (2) 14 hours 20 minutes

**14.** (1) 1 hour 55 minutes    (2) 1 hour 45 minutes

**15.** 1 hour 40 minutes    **16.** 35 minutes

◆  ◆  ◆

# MATHEMATICS

## Standard 4

### (Second Semester)
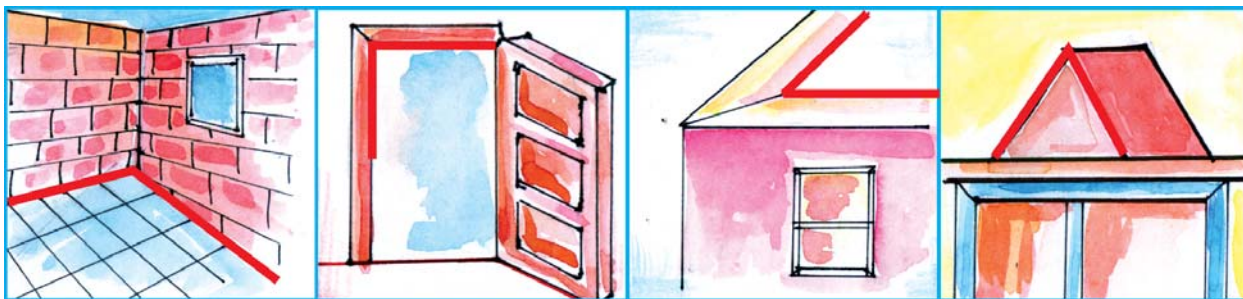
Use match-sticks to form images of the shapes made using red colour in the above pictures.
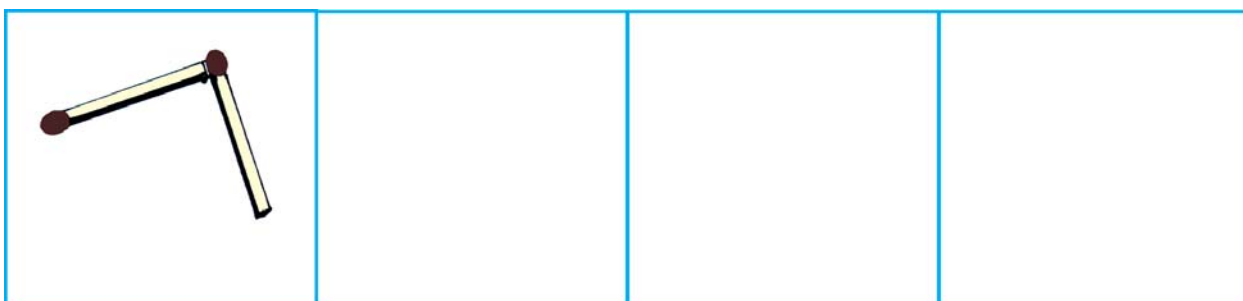
- An angle is formed in all the above diagrams. Where else do you see such angles ? Write names of such objects in the following table.

| In tiles of floor | | |
| --- | --- | --- |
| | | |
| | | |

Where do you see such angles formed in your school building ? Draw any three pictures of your choice.
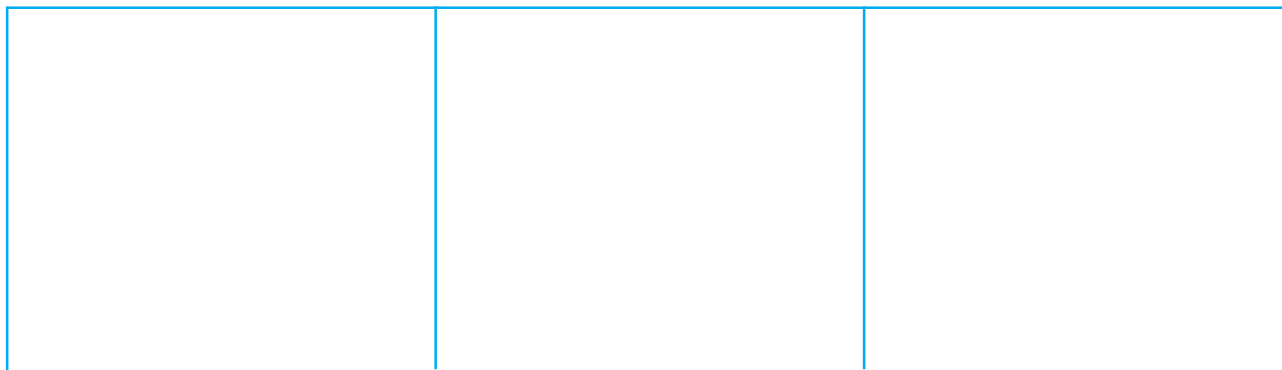
**Activity 1 :** Fold a paper as shown in the figure below.



Unfolding the page
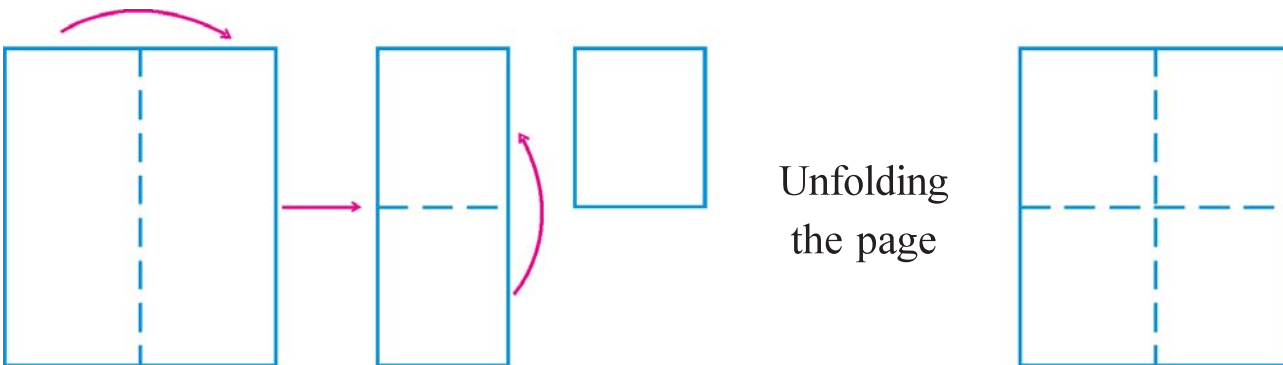
How many angles do you see in the paper ?

● Now take another paper and fold it four times.

● In which paper do you see more angles out of the two ? Observe them.

### Practice 1

1. Do the paper art by folding paper in different ways. See how many angles are formed unfolding the paper. Write them in the following table :

|  | Plane | Boat | Purse | Camera | Steamer | Ball |
|---|---|---|---|---|---|---|
| Number of Angles |  |  |  |  |  |  |
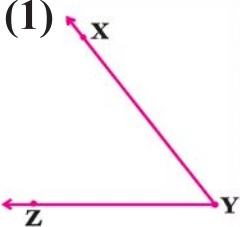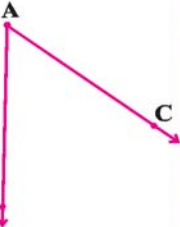
☞ **See and understand :**
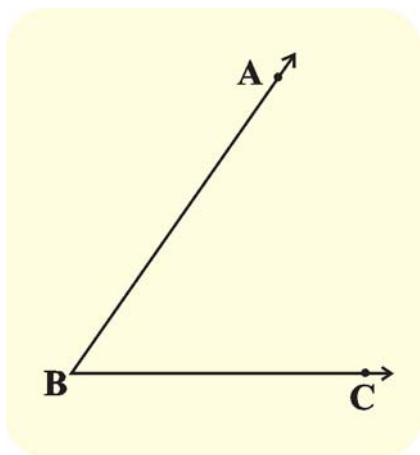


● $\overrightarrow{BA}$ and $\overrightarrow{BC}$ are two different rays. Both the rays have the same origin 'B'. Such rays are called arms or sides of angles.

● An angle is formed only if these two rays are not same.

● **An angle can be read as :** angle ABC; angle CBA or angle B. Notation for angle is "∠".

● This angle is denoted by ∠ABC or ∠CBA or ∠B.

The point from which two rays originate is called the vertex of the angle. Here B is the vertex of ∠ABC.

**Practice 2**

| Angle | An angle read as | In Symbol | Vertex | Arms/ Sides |
|---|---|---|---|---|
| **(1)** X Z Y | (1) Angle XYZ (2) _____ (3) _____ | (1) ∠XYZ (2) _____ (3) _____ | | (1) _____ (2) _____ |
| **(2)** A C B | (1) _____ (2) _____ (3) _____ | (1) _____ (2) _____ (3) _____ | | (1) _____ (2) _____ |

**Activity 2 :** Adjust your book of Mathematics as shown in the picture. Where else can your book get adjusted at the angles of different objects in your classroom? Mention the places in the following table.

|  |  |
|---|---|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
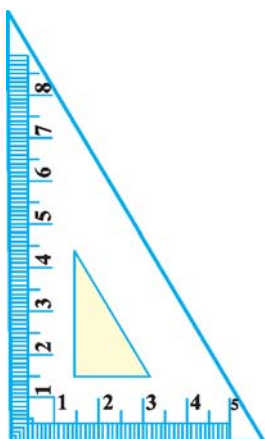
- Take out the instrument as shown in the figure from your geometry box.
- This instrument is known as **set square**.
- Adjust this set square on a page of a book as shown in the figure.
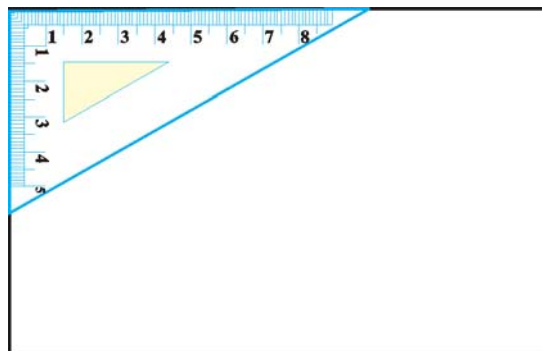
- Adjust the set square at all the four corners and study the angles.

- Take a square paper. Fold it and cut it as shown in the figure below. Place the set square at a corner of the page.
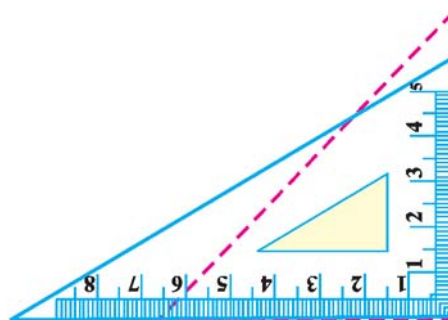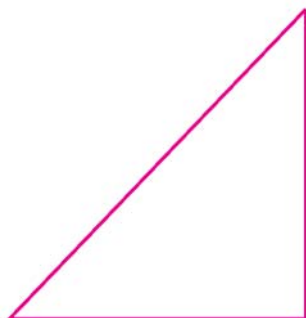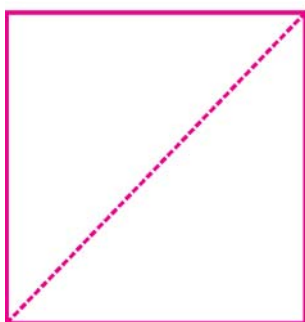
Now, place the cut page on a card board and cut the card board accordingly. Now put this card board on another page and draw two rays as shown in the figure. Now take away the card board.
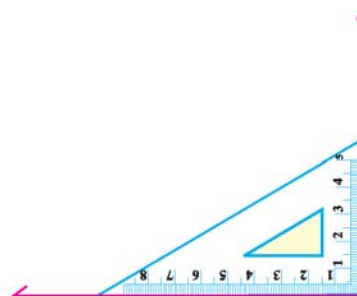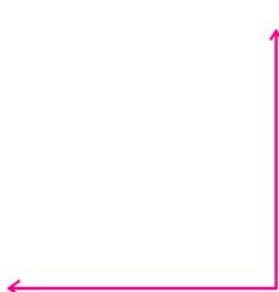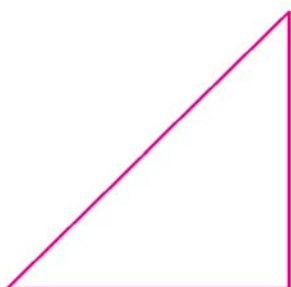
Adjusting the set square at the angle drawn, it gets adjusted accordingly. So, this angle is said to be "Right Angle".

Place the set square at the angles of different objects you find around your place. Write the names of the objects in the following table which has only right angle.
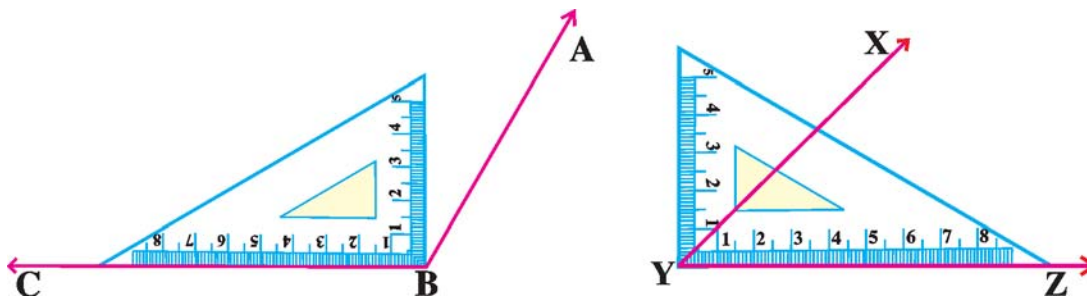
| Corner of Table | | |
|---|---|---|
| | | |
| | | |

### Practice 3

Check the angles of the following figure by placing set square. Which angles are right angles ? Denote the right angle by red X sign.
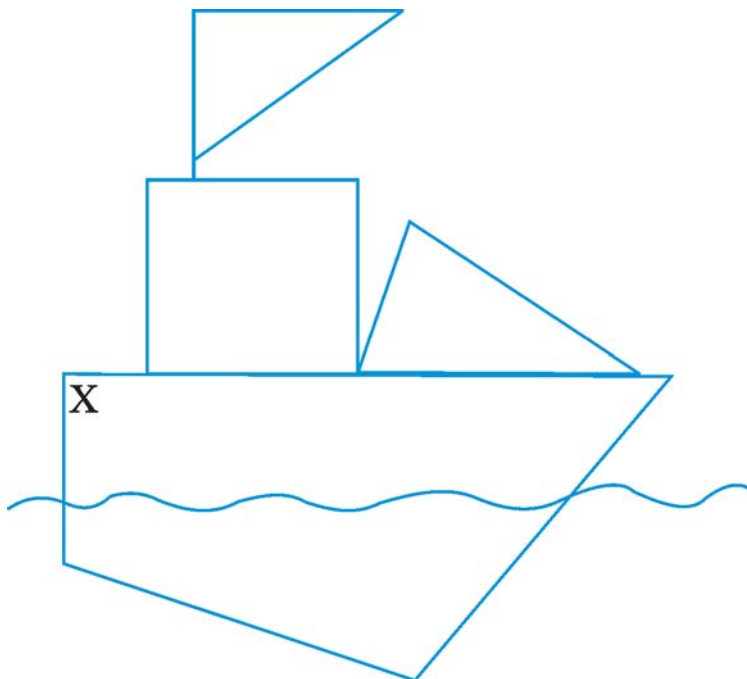


Observe what happens by placing set square in the following figures ?

- Place set square at ∠ABC.

- What do you observe ?

- From the figure; it can be observed that ∠ABC is larger than a right angle.

> An angle greater than a right angle is called an obtuse angle.

- Place set square at ∠XYZ.

- What do you observe ?

- From the figure; it can be observed that ∠XYZ is smaller than right angle.

> An angle smaller than a right angle is called an acute angle.

**Activity 3 :** Write your name using matchsticks.
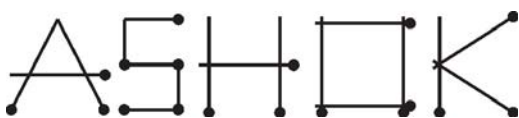


- Which types of angles are formed in writing your name ? Write the total number of different angles. Compare them with the angles in your friends' name.

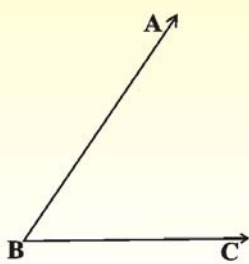| Right angle | Acute angle | Obtuse angle |
|---|---|---|
|  |  |  |

- Whose name has more number of right angles ?

- Whose name has more number of acute angles ?

- Whose name has more number of obtuse angles ?

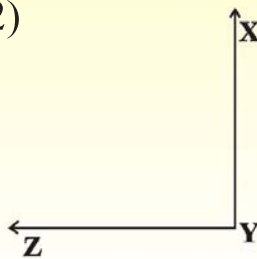Who uses set square in their professions ? Draw the pictures of their set squares.

## Practice 4

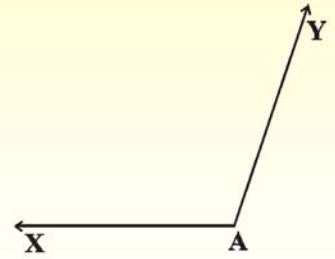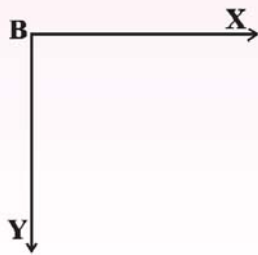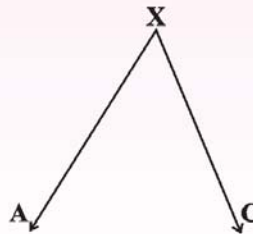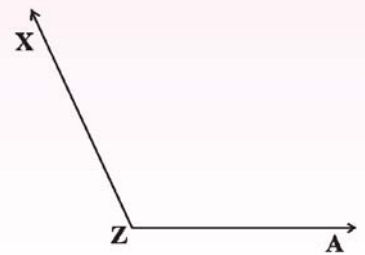**1.** Determine the type of each of the following angles using a set square :

(1) A B C

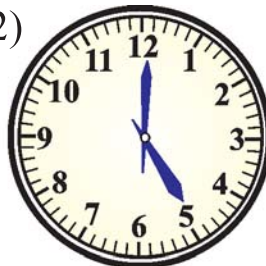(2) X Z Y

(3) Y X A

(4) B X Y

(5) X A C

(6) X Z A

**2.** Which type of angle is formed by the two hands in the following clocks :
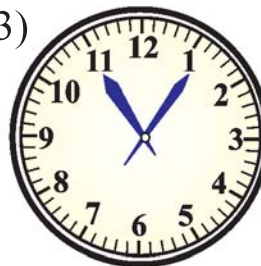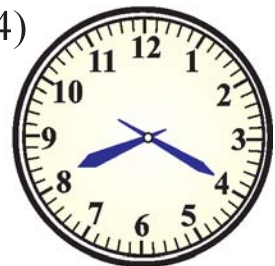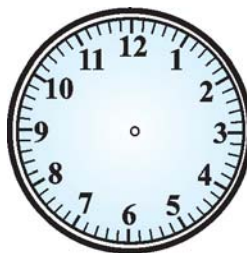
(1)

(2)

(3)

(4)

**3.** Draw the hands as per the time mentioned. Write the type of angle accordingly.
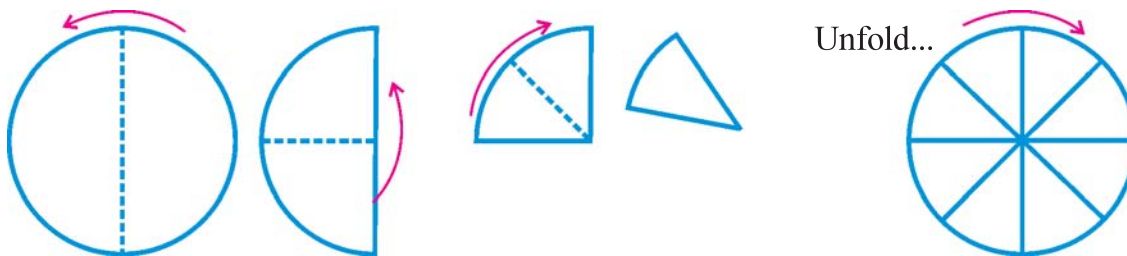
12:15

1:45

3:30

7:00

**Activity 4 :** Take a circular paper and fold it as shown in the following :
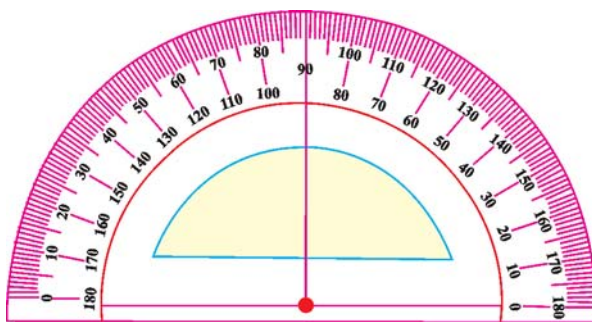
Unfold...

- Read the following instructions and fill in the colour in the different sections clockwise.

- Fill in yellow colour in one box.

- Fill in green colour in the next two boxes.

- Fill in red colour in the next three boxes.

- Fill in black colour in the remaining boxes.

**Say...**

- Which type of angle does the yellow coloured box formed?

- Take out the instrument from your geometry box as shown in this figure. This instrument is known as **protractor**.

- A protractor is used to measure an angle and to draw an angle of the given measure.

- There are 180 equal parts in a protractor. Each part is known as "Degree" and it is denoted as $1^o$.

- There are numbers from $0^o$ to $180^o$ are denoted from left hand to right hand side and vice versa. Therefore an angle can be measured from any side .

● **Measurement of an angle :**

1. Let us measure ∠ABC.
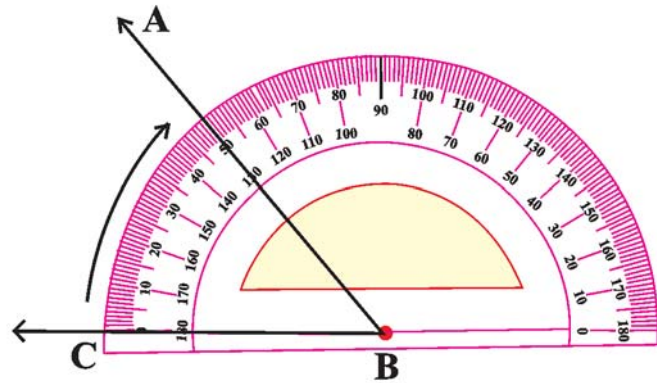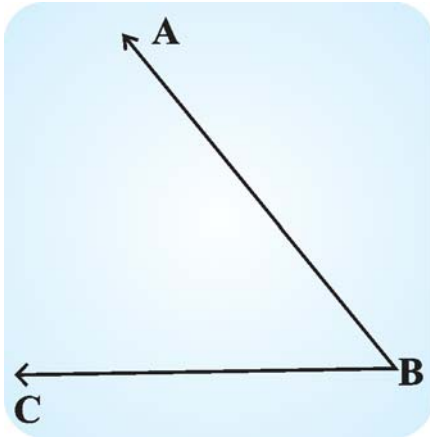


● Place the centre of the protractor at vertex B of ∠ABC.

● Adjust the base line of the protractor in such a way that $\overrightarrow{BC}$ passes through zero (0).

● Considering $0^o$ from C side, note the number through which the $\overrightarrow{BA}$ passes.

● Here, $\overrightarrow{BA}$ passes through the number '50'. Therefore measure ∠ABC = $50^o$.

2. Measure ∠XYZ.
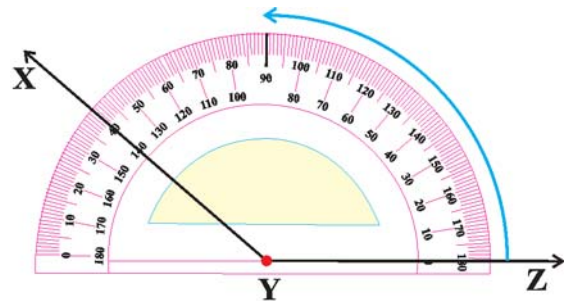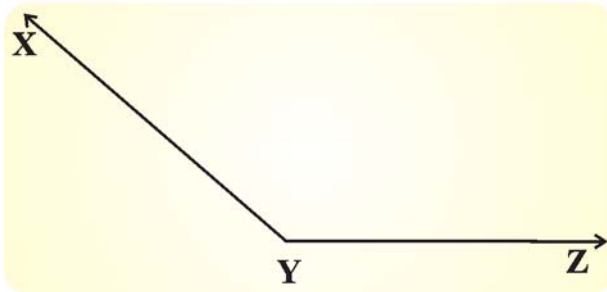


● Place the centre of the protractor at vertex Y.

● Adjust $\overrightarrow{YZ}$ in such a way that $\overrightarrow{YZ}$ passes through zero.

● Considering $0^o$ from Z side, note the number through which the $\overrightarrow{YX}$ passes.

● $\overrightarrow{YX}$ passes through the number '140' of the protractor and hence $m∠XYZ = 140^o$.

☞ **There are three types of angles according to the measure of the angles :**

(1) Measure of the right angle is 90⁰.

(2) Measure of an acute angle is between 0⁰ and 90⁰.

(3) Measure of an obtuse angle is more than 90⁰ and less than 180⁰.

**Practice 5**

1. Write the measure of each of the following angle :

(1)

(2)

(3)
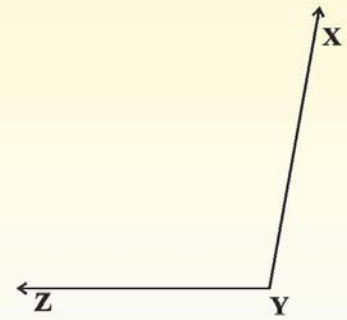
(4)
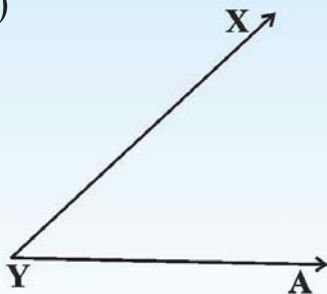
(5)
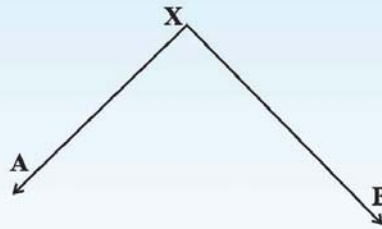
(6)
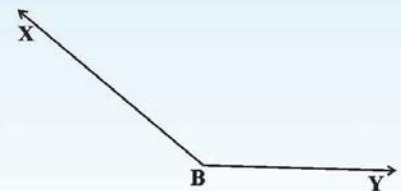
(7)
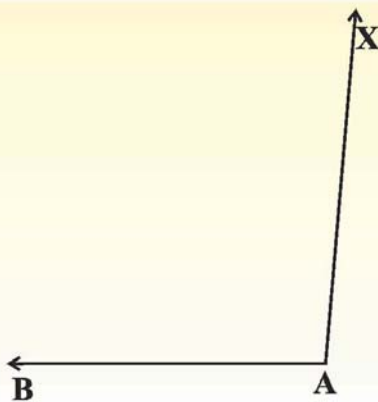
(8)
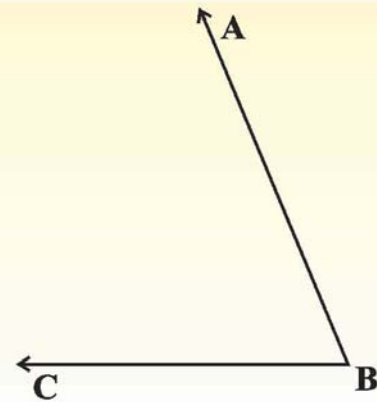
2. Find the type of the angle from the following measure of the angles :
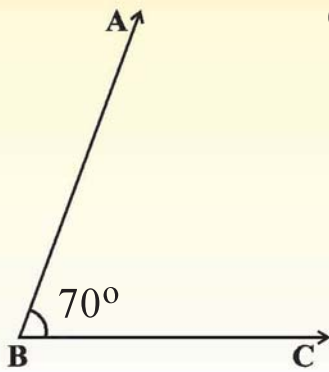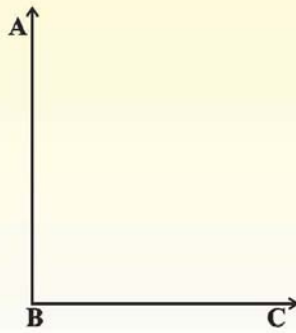   (1) $m\angle ABC = 80^o$ _____   (2) $m\angle XAY = 130^o$ _____
   (3) $m\angle XYZ = 110^o$ _____   (4) $m\angle AXB = 90^o$ _____
   (5) $m\angle AXB = 140^o$ _____   (6) $m\angle BYX = 65^o$ _____

3. Fill in the following blanks on the basis of activity 4 :
   (1) The measure of the yellow coloured angle is _____ and hence it is _____ .
   (2) The measure of the green coloured angle is _____ and hence it is _____ .
   (3) The measure of the red coloured angle is _____ and hence it is _____ .
   (4) The measure of the black coloured angle is _____ and hence it is _____ .

## Exercise

1. Fill in the blanks with the help of the figure :
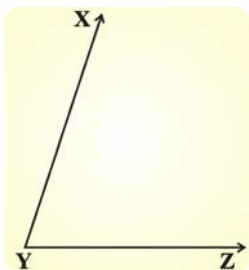
   

   (1) The vertex of angle is _____ .
   (2) This angle can be named as _____, _____ and _____.
   (3) $\angle XYZ$ has _____ and _____ arms/sides.
   (4) The type of $\angle XYZ$ is _____ angle.

2. Name the following angles in three different ways and write the type of the angle.

   (1)

   

   (1) _____
   (2) _____
   (3) _____
   Type : _____

   (2)
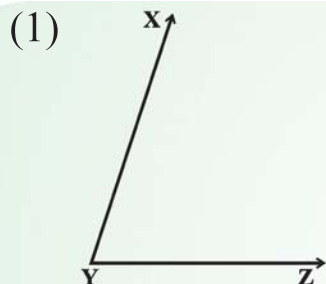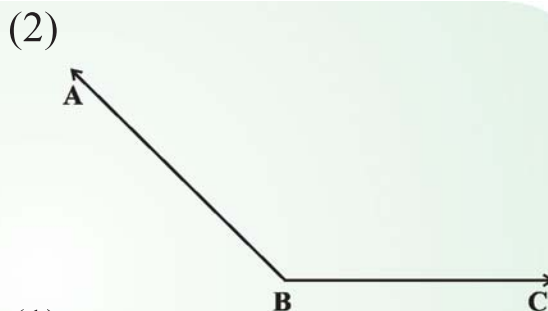
   

   (1) _____
   (2) _____
   (3) _____
   Type : _____

(3)
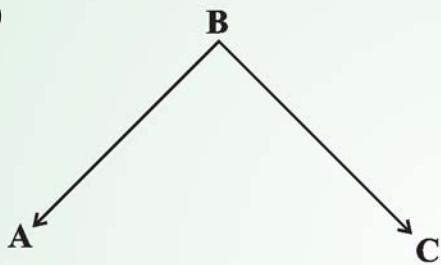


(1) _____

(2) _____

(3) _____

Type : _____

(4)
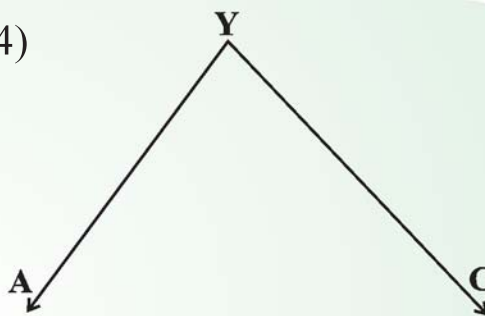


(1) _____

(2) _____

(3) _____

Type : _____

**3.** Measure the following angles using a protractor and note the measure in your note-book :

(1)
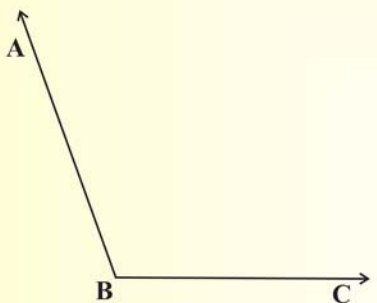


(2)
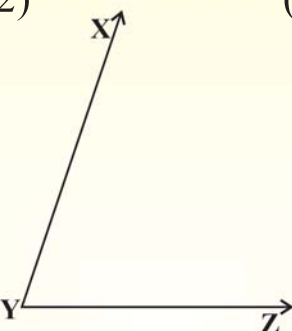


(3)
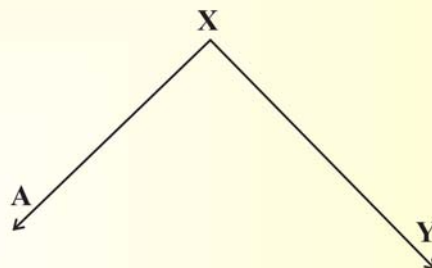


(4)
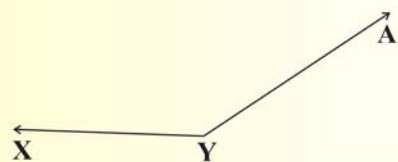


(5)



(6)
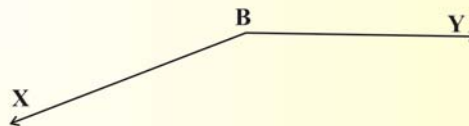


**4.** Find out the type of the angle from the measure given below :

(1) $m\angle ABC = 70^o$ _____

(2) $m\angle XYZ = 90^o$ _____

(3) $m\angle XBC = 140^o$ _____

(4) $m\angle XAZ = 85^o$ _____

5. Draw a diagram of your house and mention the types and number of the different angles :
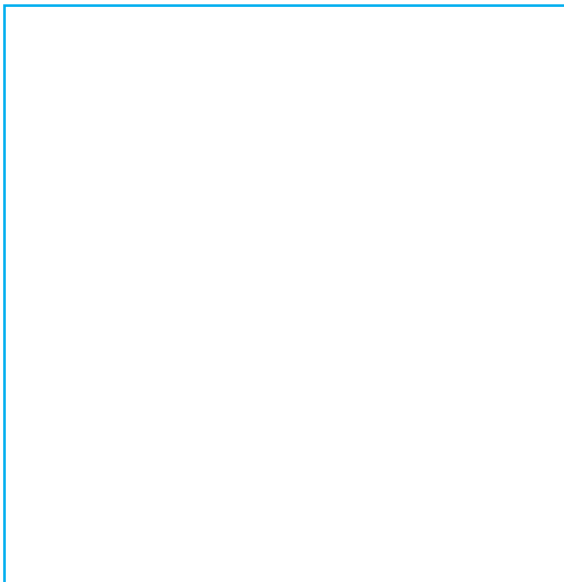
Right angle : _____

Acute angle : _____

Obtuse angle : _____

6. Here, you see a picture which is made by joining the dots. Acute angles, obtuse angles and right angles are denoted by red colour, green colour and blue colour respectively :
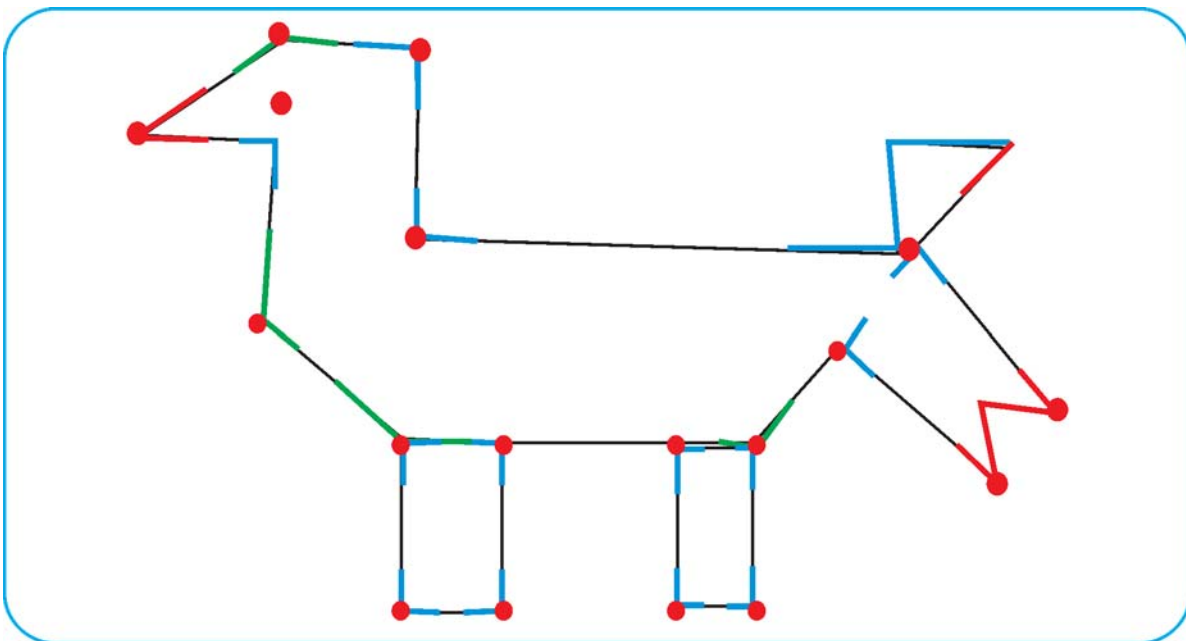


Search for similar activity based pictures from news-paper where you find different types of angles. Now, colour acute angle, obtuse angle and right angle with red, yellow and pink respectively.

**7.    Select correct option and answer in** ☐ .

(1)  What is the vertex of ∠ABC ?                                    ☐

    (a) A           (b) B           (c) C           (d) None of these

(2)  Which one is an arm of ∠XYZ ?                                    ☐

    (a) $\overrightarrow{XY}$      (b) $\overrightarrow{YZ}$      (c) $\overrightarrow{ZY}$      (d) $\overrightarrow{XZ}$

(3)  What is the measure of the largest angle in a set square ?    ☐

    (a) 30º        (b) 60º        (c) 180º       (d) 90º

(4)  Which one is not an acute angle ?                              ☐

    (a) 50º        (b) 70º        (c) 92º       (d) 80º

(5)  If $m\angle ABC = 130º$; which type of angle is it ?            ☐

    (a) Obtuse angle  (b) Right angle  (c) Acute angle  (d) None of these

(6)  If it is 9 O'clock in a clock; which type of angle is formed by two hands ?    ☐

    (a) Acute angle  (b) Obtuse angle  (c) Right angle  (d) None of these

(7)  Angle ABC cannot be written as : _____ .            ☐

    (a) ∠ABC      (b) ∠CBA      (c) ∠B      (d) ∠CAB

**Answers**

**Practice 2**

| | | | | |
|---|---|---|---|---|
| **(1)** | (1) Angle XYZ | (1) ∠XYZ | | $\overrightarrow{YX}$ |
| | (2) Angle ZYX | (2) ∠ZYX | Y | $\overrightarrow{YZ}$ |
| | (3) Angle Y | (3) ∠Y | | |
| **(2)** | (1) Angle BAC | (1) ∠BAC | | $\overrightarrow{AC}$ |
| | (2) Angle CAB | (2) ∠CAB | A | $\overrightarrow{AB}$ |
| | (3) Angle A | (3) ∠A | | |

## Practice 4

1.  (1) Acute angle    (2) Right angle    (3) Obtuse angle
    (4) Right angle    (5) Acute angle    (6) Obtuse angle
2.  (1) Right angle    (2) Obtuse angle    (3) Acute angle
    (4) Obtuse angle
3.  (1) Acute angle    (2) Obtuse angle    (3) Acute angle
    (4) Obtuse angle

## Practice 5

1.  (1) Acute angle    (2) Obtuse angle    (3) Obtuse angle
    (4) Right angle    (5) Obtuse angle    (6) Acute angle
2.  (1) 45°, Acute angle    (2) 90°, Right angle    (3) 135°, Obtuse angle
    (4) 90°, Right angle

## Exercise

1.  (1) Y    (2) ∠XYZ, ∠ZYX, ∠Y    (3) $\overrightarrow{YX}$, $\overrightarrow{YZ}$    (4) Acute angle
2.  (1) ∠XYZ, ∠ZYX, ∠Y, Acute angle
    (2) ∠ABC, ∠CBA, ∠B, Obtuse angle
    (3) ∠ABC, ∠CBA, ∠B, Right angle
    (4) ∠AYC, ∠CYA, ∠Y, Acute angle
4.  (1) Acute angle    (2) Right angle    (3) Obtuse angle    (4) Acute angle
5.  (1) b    (2) b    (3) d    (4) c    (5) a    (6) c    (7) d

◆

# 9 Triangle and its Types

☞ **Let us recall :**

● Draw a triangle, a square, a rectangle, a pentagon and a hexagon by joining points given in the box below :
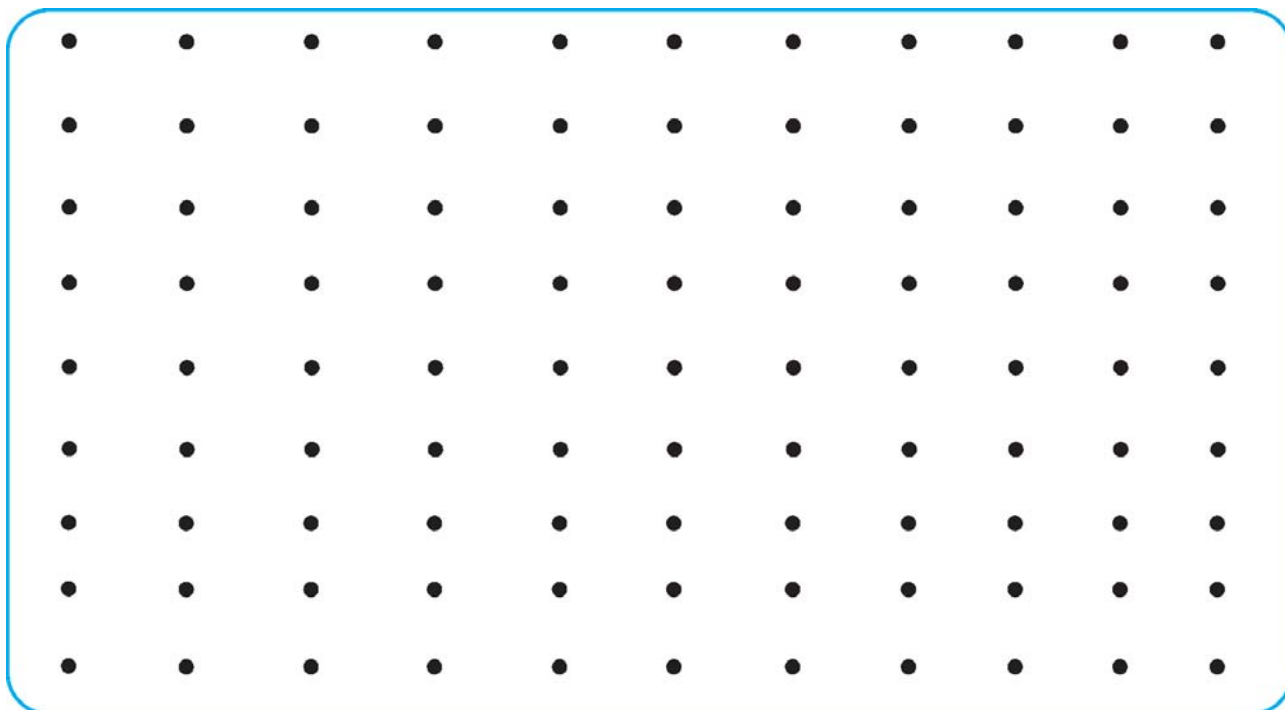
● **Now answer the following questions on the basis of your activity :**

(1) How many line segments did you draw to draw a triangle ?

_____

(2) How many line segments did you draw to draw a square ?

_____

(3) How many line segments did you draw to draw a pentagon ?

_____

(4) How many line segments did you draw to draw a hexagon ?

_____

(5) How many triangles did you draw in this box ?

_____

☞ **Let us learn something new :**

**Activity 1 :**
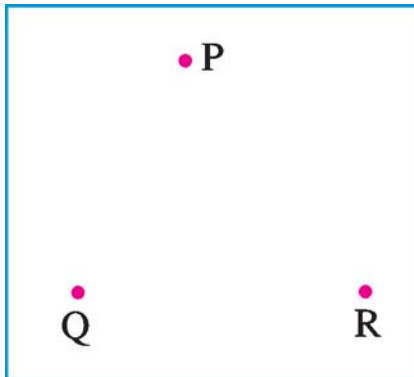


Points P, Q and R are given in the adjacent box. Draw $\overline{PQ}$, $\overline{QR}$ and $\overline{RP}$ with the help of the scale. Which figure is formed ? Think.

☞ Friends, a triangle has been formed ! Thus, a closed figure formed by three line segments is a triangle. Here, the triangle formed is the triangle PQR. Symbol for triangle is 'Δ'. Therefore, triangle PQR can be written as ΔPQR in symbol.

● Answer the following questions based on activity 1.

(1) How many points did you join to form ΔPQR ? Which are they ? _____

(2) Which line segments did you draw to form ΔPQR ? Which are they ? _____

(3) How many angles were formed after drawing ΔPQR ? Which are they ? _____
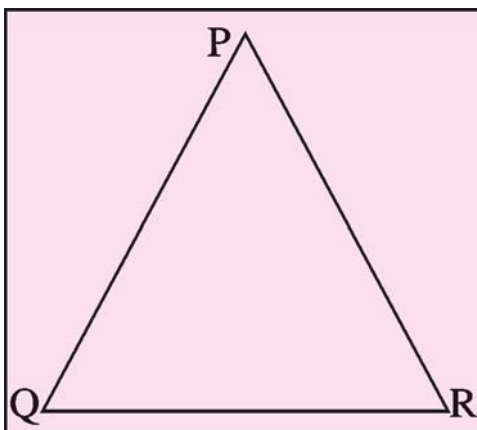


● This is a figure of ΔPQR.

● P, Q and R are the vertices of ΔPQR.

● $\overline{PQ}$, $\overline{QR}$ and $\overline{RP}$ are the sides of ΔPQR.

● ∠P, ∠Q and ∠R are three angles of ΔPQR which also can be denoted as ∠QPR, ∠PQR and ∠QRP respectively.

- Thus, any triangle has three sides, three angles and three vertices.
- Sides and angles are parts of triangles.
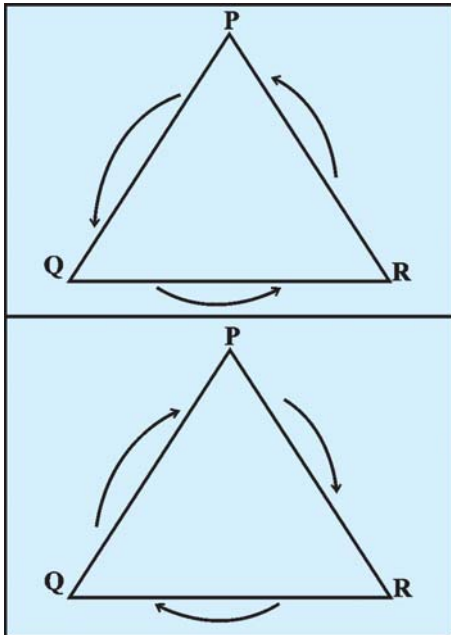


- Let us understand that the name of a triangle can be written beginning with any vertex.
- From the figure it can be understood that if we start with P, the triangle is called ΔPQR and ΔPRQ.
- If we start with Q, the triangle is called ΔQRP and ΔQPR.
- If we start with R, the triangle is called ΔRQP and ΔRPQ.

Thus, a triangle can be named in six different ways.
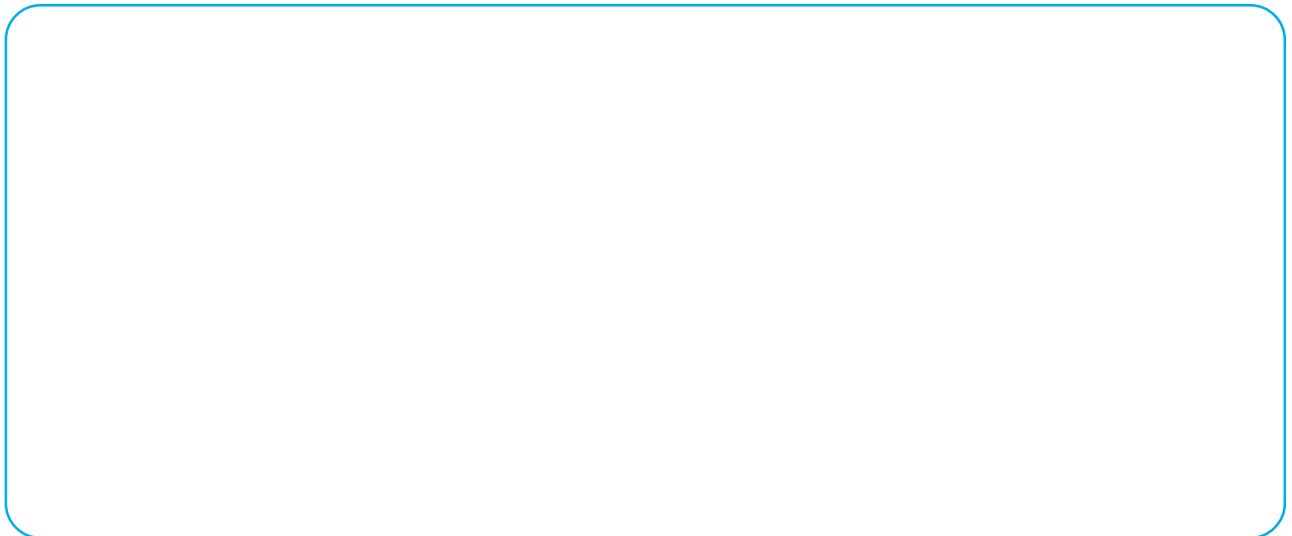
- Close your eyes and plot points (dots) in the above box. Now draw a triangle by joining 3 points which are not on a straight line. Form at least 25 triangles. Fill in every triangle with different colour. Are all the triangles same ? They are not ! Thus, there are different types of triangles. Let's know more about them.

☞ **Types of triangle :**

Types of triangle can be decided in two ways :

(1) On the basis of measures of angles.

(2) On the basis of measures of sides.

☞ **Types of triangle on the basis of measure of angles :**

There are three types of triangles on the basis of angles. Let us understand this by activity.

☞ **Activity 2 :**

Measure the angles of the triangles using protractor and fill in the blanks :
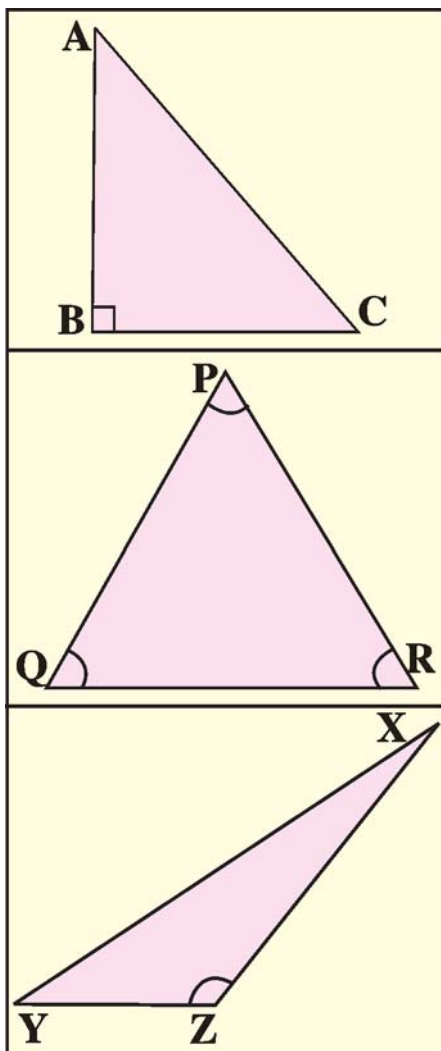


In $\triangle$ABC, $m\angle$BAC = _____

$m\angle$ABC = _____

$m\angle$ACB = _____

In $\triangle$PQR, $m\angle$PQR = _____

$m\angle$QRP = _____

$m\angle$RPQ = _____

In $\triangle$XYZ, $m\angle$XYZ = _____

$m\angle$YZX = _____

$m\angle$ZXY = _____

☞ **Answer the following questions based on activity 2 :**

(1) In which triangle, a right angle is formed ? _____

(2) In which triangle, all the angles are acute ? _____

(3) In which triangle, an obtuse angle is formed ? _____

## 1. Right angled triangle (Right Triangle) :
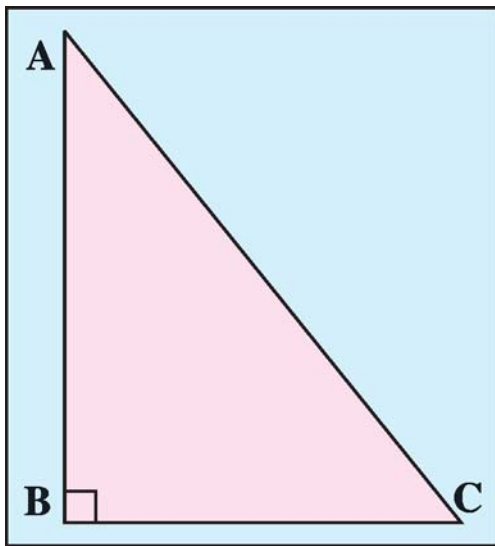
- If one angle of a triangle is a right angle; the triangle is called a right triangle or right angled triangle.

- Here in ΔABC; ∠B is right angle. So, ΔABC is a right triangle.

- In a right triangle, the two angles other than the right angle are always acute angles. Here, ∠A and ∠C are acute angle.

## 2. Acute angled triangle :
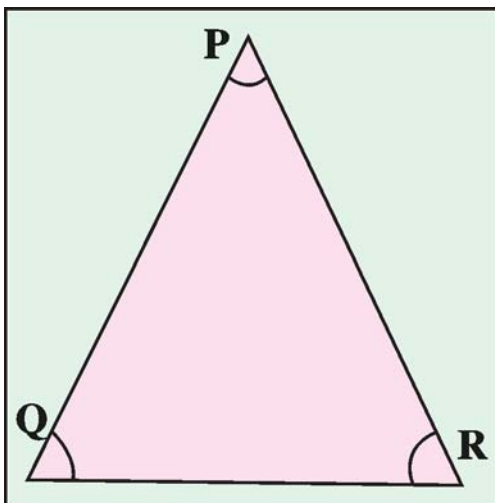
- A triangle, in which all the three angles are acute, is called an acute angled triangle

- Here, in ΔPQR; ∠P, ∠Q and ∠R are all acute angles which we understood in activity 2.

- Therefore, ΔPQR is an acute angled triangle.

**3.    Obtuse angled triangle :**
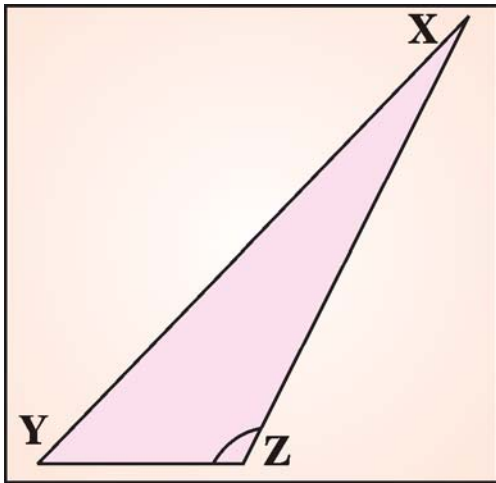


- If one angle of a triangle is an obtuse angle, the triangle is called an obtuse angled triangle.

- Here in ΔXYZ, ∠Z is an obtuse angle. Therefore, ΔXYZ is an obtuse angled triangle.

- In an obtuse angled triangle, the two angles other than the obtuse angle are always acute angles. Here, ∠X and ∠Y are acute angles.

**Practice 1**

**1.    Fill in the following blanks :**

(1)  A triangle is a closed figure formed by _____ line segments.

(2)  The symbol for a triangle is _____ .

(3)  A triangle can be named in _____ different ways.

(4)  A triangle has total _____ parts.

(5)  In a right angled triangle _____ angles are acute angles.

**2.    Write the name and type of triangle as per the measures given below :**

(1)  $m\angle A = 30^o$, $m\angle B = 90^o$, $m\angle C = 60^o$

(2)  $m\angle G = 120^o$, $m\angle B = 25^o$, $m\angle P = 35^o$

(3)  $m\angle D = 60^o$, $m\angle E = 60^o$, $m\angle F = 60^o$

(4)  $m\angle X = 72^o$, $m\angle Y = 28^o$, $m\angle Z = 80^o$

**3.    See the figure below and answer the following questions :**



(1)  Write any two vertices of ΔABC.

(2)  Express ΔABC in two different ways.

(3)  Write any two parts of ΔABC.
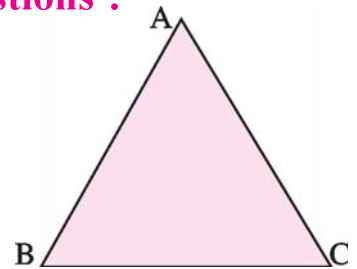
☞ **Types of triangle according to measures of sides :**

Let us understand that on the basis of measures of sides there are three types of triangle.

**Activity 3 :**
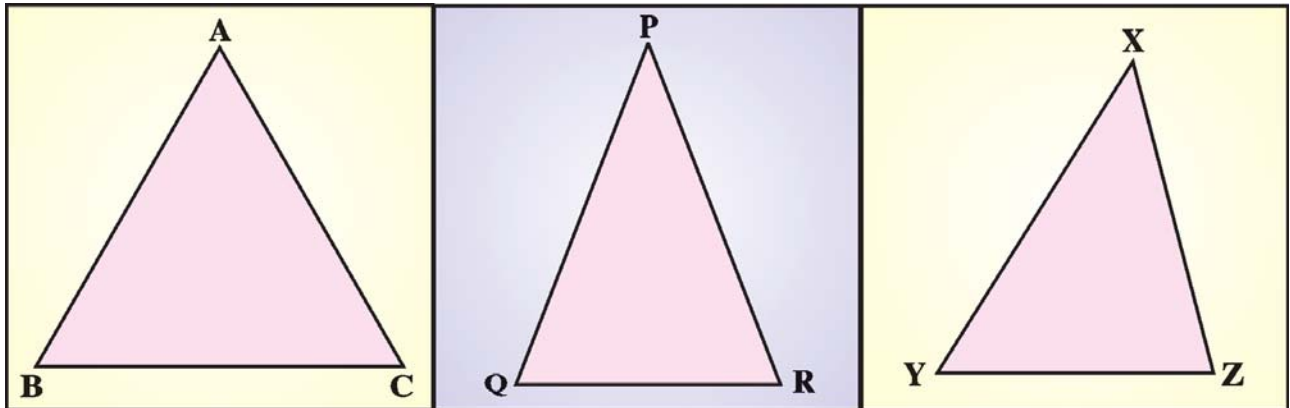


☞ **Fill in the following blanks by measuring the sides of triangle using a scale :**

● In ΔABC; AB = _____, BC = _____, AC = _____ .

● In ΔPQR; PQ = _____, QR = _____, PR = _____ .

● In ΔXYZ; XY = _____, YZ = _____, XZ = _____ .

☞ **Answer the following questions on the basis of Activity 3 :**

(1) In which triangle, all the three sides have equal measure ? _____

_____

(2) In which triangle, exactly two sides have same measure ? _____

_____

(3) In which triangle, all the three sides have different measures ? _____

_____

## 1. Equilateral triangle :



- Using activity 3 and on the basis of measures of sides of the given triangle we come to know that in ΔABC all the three sides have equal measure. (length)

- Thus, a triangle whose all the three sides have same measure (length), is known as an equilateral triangle.

- Here is ΔABC, measures (length) of sides $\overline{AB}$, $\overline{BC}$ and $\overline{AC}$ are equal.

- Therefore, ΔABC is an equilateral triangle.

## 2. Isosceles triangle :



- Using activity 3 and on the basis of measures of sides of the given triangle we come to know that in ΔPQR measure (length) of $\overline{PQ}$ and $\overline{PR}$ are equal.

- Thus, a triangle whose any two sides have exactly same measure (length) is known as an isosceles triangle.

- Therefore, ΔPQR is an isosceles triangle.

## 3. Scalene triangle :



- Using activity 3 and on the basis of measures of sides of the given triangle we come to know that in ΔXYZ all the three sides have different measures (length).

- Thus, a triangle whose all the three sides have different measures is called scalene triangle.

- Here measures (lengths) of $\overline{XY}$, $\overline{YZ}$, $\overline{ZX}$ in ΔXYZ are different.

- Therefore, ΔXYZ is a scalene triangle.

☞ **Types of triangle :**

| According to measure of angle | According to measures of side |
|---|---|
| (1) Right angled triangle | (1) Equilateral triangle |
| (2) Acute angled triangle | (2) Isosceles triangle |
| (3) Obtuse angled triangle | (3) Scalene triangle |

**Exercise**

1. **State whether each of the following statements is true or false :**
   (1) All the angles of obtuse angled triangle are obtuse.
   (2) All the angles of acute angled triangle are equal.
   (3) All the sides of equilateral triangle have same measure (length).
   (4) Measures (lengths) of two sides of isosceles triangle are equal.

2. **Draw any one triangle and write the type of triangle on the basis of its sides and on the basis of measures of angles.**

3. **Draw an isosceles triangle and write the measures (lengths) of its sides :**

**4.** Write the type of triangle on the basis of the measures (lengths) of sides of ΔABC.

(1) AB = 6 *cm*; BC = 7 *cm*, AC = 6 *cm*

(2) AB = 5 *cm*; BC = 5 *cm*, AC = 5 *cm*

(3) AB = 3 *cm*; BC = 5 *cm*, AC = 4 *cm*

**5.** Write the type of triangle on the basis of the measures of angles of ΔABC.

(1) $m\angle A = 35^o$, $m\angle B = 65^o$, $m\angle C = 80^o$

(2) $m\angle A = 30^o$, $m\angle B = 90^o$, $m\angle C = 60^o$

(3) $m\angle A = 100^o$, $m\angle B = 40^o$, $m\angle C = 40^o$

**Answers**

**Practice 1**

**1.** (1) Three   (2) Δ   (3) six   (4) six   (5) two

**2.** (1) Right angled triangle, ΔABC   (2) Obtuse angled triangle, ΔGBP

(3) Acute angled triangle, ΔDEF   (4) Acute angled triangle, ΔXYZ

**Exercise**

**1.** (1) False   (2) False   (3) True   (4) True

**4.** (1) Isosceles triangle   (2) Equilateral triangle   (3) Scalene triangle

**5.** (1) Acute angled triangle

(2) Right angled triangle

(3) Obtuse angled triangle

# 10 Division

☞ **Let us recall :**

**Activity 1 :** Look at the pictures and understand :

(1)
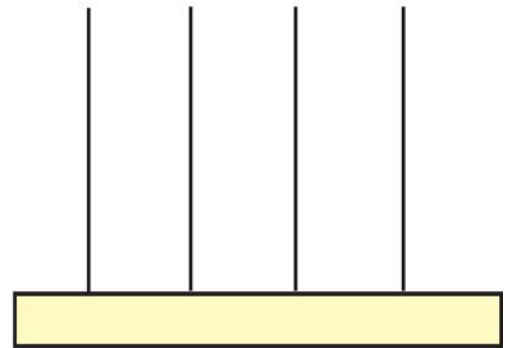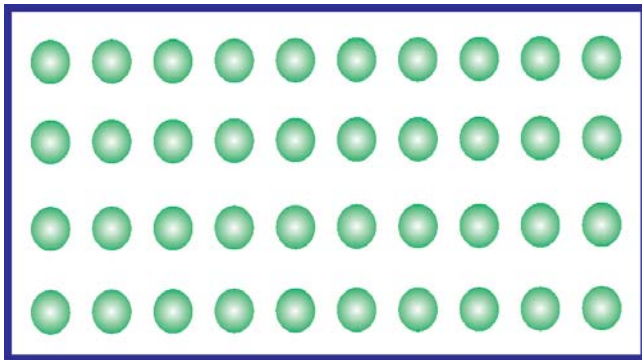


Count beads given in the box and draw on the rods, in such a way that each rod gets equal number of beads.

- The box has ⎯⎯⎯⎯⎯⎯ beads.

- In how many equal parts have you divided beads ? ⎯⎯⎯⎯⎯⎯

- Each part has ⎯⎯⎯⎯⎯⎯ beads.

(2)

Friends ! Now arrange these beads equally in each rod in the following abacus in turn and understand.
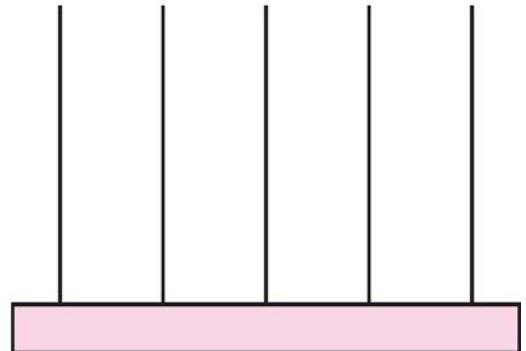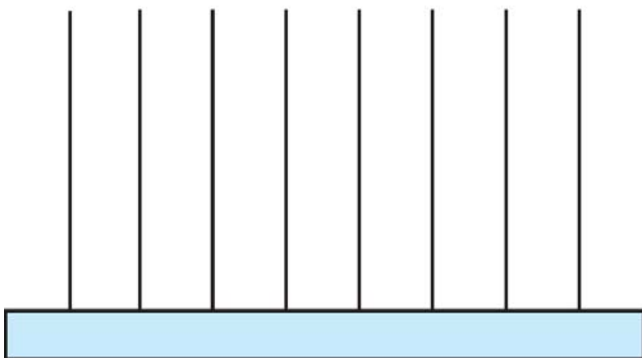
**Activity 2 :** Select three colours of your choice and fill in the boxes equally with each colour :

1. **Distribute the following things to each one equally, write that number in** ☐ **:**

   (1) 9 pencils among 9 kids ☐

   (2) 45 kites among 5 kids ☐

   (3) 42 chocolates among 6 kids ☐

   (4) 32 sweets among 8 persons ☐

   (5) 76 bananas among 4 monkeys. ☐

2. **Divide :**

   (1) 205 ÷ 5  (2) 264 ÷ 2  (3) 368 ÷ 4

   (4) 905 ÷ 5  (5) 800 ÷ 8  (6) 675 ÷ 9

3. **Evaluate :**

   (1) If we distribute ₹ 100 among 10 persons; then how many rupees does each person get ?

   (2) If 175 mangoes are equally distributed in 7 boxes; how many mangoes does each box contain ?

   (3) How many bunches of plums can be made from 144 plums if each bunch contains 9 plums ?

   (4) Akshay purchases chocolates worth ₹ 135 to distribute among his friends on his birthday. If each chocolate costs ₹ 9; how many chocolates does Akshay purchase ?

☞ **Let us learn something new :**

**Activity 3 :**

I have brought 85 flowers in this basket. I want to make garlands with 20 flowers each. Please help me.

- She makes a garland of 20 flowers. Now $85 - 20 =$ _____ flowers are left.

- She makes a second garland of 20 flowers. Now she is left with _____ $- 20 =$ _____ flowers.

- With the remaining flowers, she makes a third garland of 20 flowers. Now _____ $- 20 =$ _____ flowers remain.

- Now, she makes a fourth garland of 20 flowers. She has _____ $- 20 =$ _____ flowers.

☞ **Think :**

(1) Now can a fifth garland be made of 20 flowers ? _____

(2) With 85 flowers, how many garlands are made ? _____

(3) How many flowers were left in the end ? _____

☞ **Try this :**

(1) Collect 97 stones from a play ground and distribute equally among 10 kids.

(2) Collect and distribute 100 stones equally among 12 friends.

☞ **Observe the following division and understand the difference between them :**

**(1)** 81 ÷ 3

$$
\begin{array}{r}
27 \\
3\,\overline{\smash{\big)}\,81} \\
-6 \\
\hline
21 \\
-21 \\
\hline
00
\end{array}
$$

**(2)** 82 ÷ 3

$$
\begin{array}{r}
27 \\
3\,\overline{\smash{\big)}\,82} \\
-6 \\
\hline
22 \\
21 \\
\hline
01
\end{array}
$$

- Nothing is left at the end in 81 ÷ 3.
- 1 is left at the end in 82 ÷ 3.
- **The number that remains is called the remainder.**
- In 81 ÷ 3 the remainder is '0'.
- **When zero is the remainder; the division is called the 'division without remainder'.**
- In 82 ÷ 3; 1 is the remainder. 82 is the **dividend**, 3 is the **divisor** and 27 is the **quotient** and 1 is the **remainder**.

**Form of Division**

$$
\begin{array}{r}
27 \leftarrow \textbf{Quotient} \\
\textbf{Divisor} \rightarrow 3\,\overline{\smash{\big)}\,82} \leftarrow \textbf{Dividend} \\
-6 \\
\hline
22 \\
-21 \\
\hline
01 \leftarrow \textbf{Remainder}
\end{array}
$$

- Remainder is always smaller than divisor.
- 81 ÷ 3 = 27, therefore 81 = 3 × 27
- In 82 divided by 3, 27 is the quotient and 1 is the remainder. Therefore, 82 = 3 × 27 + 1, hence it can be said that,

   Dividend = Divisor × Quotient + Remainder.

## Practice 1

**1.** **Denote dividend, divisor, quotient and remainder :**

(1)

```
                        16 ← [          ]
      [          ] → 3 | 49 ← [          ]
                       −3
                       ───
                        19
                       −18
                       ───
                        01 ← [          ]
```

(2)

```
                        125 ← [          ]
      [          ] → 5 | 629 ← [          ]
                       −5
                       ───
                        12
                       −10
                       ───
                        29
                       − 25
                       ────
                        04 ← [          ]
```

**2.** **Divide and denote dividend, divisor, quotient and remainder :**

(1)  75 ÷ 6         (2) 67 ÷ 2         (3) 95 ÷ 8

(4)  90 ÷ 7         (5) 105 ÷ 4        (6) 100 ÷ 3

(7)  208 ÷ 5        (8) 500 ÷ 9        (9) 49 ÷ 7

☞ **Division of a three-digit number by a single-digit number :**

● **Observe and understand :**

**Example 1 : 946 ÷ 5**

$$
\begin{array}{r}
189 \\
5\,\overline{)\,946} \\
-5 \\
\hline
44 \\
-40 \\
\hline
046 \\
-45 \\
\hline
01
\end{array}
$$

Quotient : 189
Remainder : 1

**Example 2 : 629 ÷ 3**

$$
\begin{array}{r}
209 \\
3\,\overline{)\,629} \\
-6 \\
\hline
029 \\
-27 \\
\hline
02
\end{array}
$$

From now onwords, we will not put '–' sign for subtraction when subtraction is done during division operation.

Quotient : 209
Remainder : 2
Let us verify whether the above answer is correct or not !
Dividend = Divisor × Quotient + Remainder
         = 3 × 209 + 2
         = 627 + 2
         = 629
Dividend is 629 and hence the division is correct.

**Practice 2**

1. **Divide the following and denote quotient and remainder :**

(1) 325 ÷ 4        (2) 557 ÷ 8        (3) 574 ÷ 6

(4) 575 ÷ 4        (5) 820 ÷ 9        (6) 848 ÷ 5

2. **Divide the following and verify using**

**'Dividend = Divisor × Quotient + Remainder'.**

(1) 564 ÷ 7        (2) 841 ÷ 4        (3) 454 ÷ 5

☞ **Division of a two-digit number by a two-digit number :**

● **Observe and understand :**

| 66 ÷ 6 | 66 ÷ 11 |
|---|---|

Khushi does 66 ÷ 6 as follows.
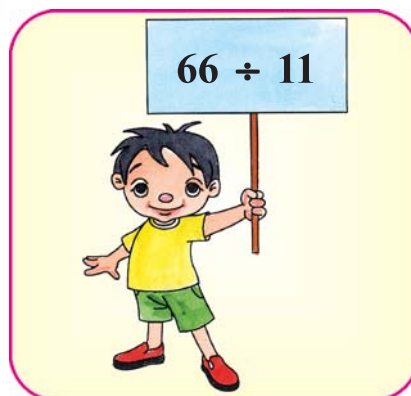
Help Sadik to do 66 ÷ 11.

```
        11
    6 ⌐ 66
        6
      ─────
        06
       −6
      ─────
        0
```

Quotient : ........

Remainder : ........

```
    11 ⌐ 66
```

Quotient : ........

Remainder : ........

● Which number of table does Sadik need to recite ?

● The answer is 66, if Sadik multiply 11 × ___ .

● Think and try division yourself.

**Example 3 :** 81 ÷ 13

**Solution :**

```
          6
   13 ⌐ 81
        78
      ─────
         3
```

● Recite the table of 13.

$13 \times 1 = 13$, $13 \times 2 = 26$, $13 \times 3 = 39$, $13 \times 4 = 52$, $13 \times 5 = 65$, $13 \times 6 = 78$, $13 \times 7 = 91$,...

● Hence $13 \times 7 = 91$ is greater than 81 where as $13 \times 6 = 78$ is less than 81. Therefore, we can consider that 6 can be used as a divisor.

● Subtracting 78 from 81; remainder is 3; Quotient = 6; Remainder = 3

## Practice 3

**1.** **Divide the following and denote the quotient and the remainder :**

(1) 72 ÷ 12        (2) 56 ÷ 14        (3) 90 ÷ 15

(4) 91 ÷ 13        (5) 70 ÷ 14        (6) 82 ÷ 16

(7) 92 ÷ 17        (8) 95 ÷ 18        (9) 96 ÷ 19

**2.** **Make 5 examples of division and calculate.**

\*

☞ **Observe the example given here and understand :**

**Example 4 :** $\boxed{6} \times \boxed{13} + \boxed{2} = \underline{80}$

Two examples of division can be made from this.

(1) 80 ÷ 6

```
        13
  6 | 80
      6
     ----
      20
      18
     ----
      02
```

Quotient : 13, Remainder 2

(2) 80 ÷ 13

```
         6
  13 | 80
       78
      ----
       02
```

Quotient : 6, Remainder 2

☞ **Write a single digit number in box has shown in example 4 and make examples of division and calculate : (Write smaller number in the second box than the number in first box.)**

(1) $\boxed{\phantom{0}} \times \boxed{12} + \boxed{\phantom{0}} = $ _____

(2) $\boxed{\phantom{0}} \times \boxed{15} + \boxed{\phantom{0}} = $ _____

(3) $\boxed{\phantom{0}} \times \boxed{13} + \boxed{\phantom{0}} = $ _____

(4) $\boxed{\phantom{0}} \times \boxed{16} + \boxed{\phantom{0}} = $ _____

(5) $\boxed{\phantom{0}} \times \boxed{14} + \boxed{\phantom{0}} = $ _____

Consider any one number as a dividend from two numbers whose product is complete.

☞ **Division of a three-digit number by a two-digit number :**

● We have learnt division of a two-digit number by a one digit number and two-digit number.

● Similarly, let us learn to divide a three-digit number by a two-digit number.

● **Observe carefully :**

**Example 5 : 350 ÷ 14**

```
          25
    14 | 350
         28
        ____
          70
          70
        ____
          00
```

Quotient : 25, Remainder : 0

**Example 2 : 599 ÷ 17**

```
          35
    17 | 599
         51
        ____
          89
          85
        ____
          04
```

Quotient : 35, Remainder : 4

**Practice 4**

**1.   Divide the following :**

(1)  133 ÷ 12          (2) 304 ÷ 13          (3) 620 ÷ 18

(4)  637 ÷ 15          (5) 370 ÷ 16          (6) 415 ÷ 17

**2.   Divide the following :**

(1)  312 ÷ 12          (2) 361 ÷ 19          (3) 495 ÷ 15

**3.   Find three mistakes in three minutes :**

(1)
```
          70
     3 | 240
        −24
        _____
         000
         −9
        _____
           0
```

(2)
```
          13
     3 | 309
        −3
        _____
         069
         −9
        _____
           2
```

(3)
```
          15
     7 | 735
        −7
        _____
         035
        −35
        _____
          00
```

☞ **Practical examples :**

● Look at the given picture and understand :
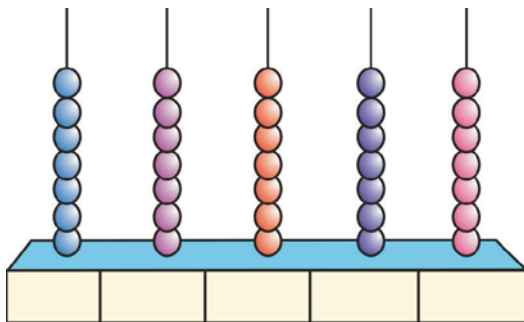


● Here, 35 beads are equally distrib-uted on 5 rods. Each rod has _____ beads.

● That is $35 \div 5 =$ _____ .

● **Activity 4 :** Number of beads is written in ☐. Distribute them equally among each rod and denote the division.

(1) ☐24☐ beads



☐24☐ ÷ _____ = _____

(2) ☐48☐ beads



☐48☐ ÷ _____ = _____

(3) ☐30☐ beads



☐30☐ ÷ _____ = _____

(4) ☐28☐ beads



☐28☐ ÷ _____ = _____
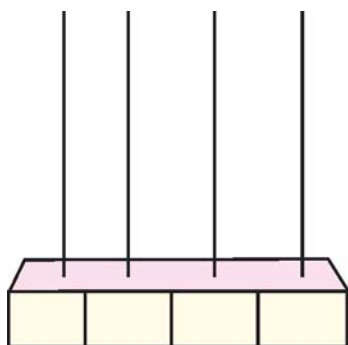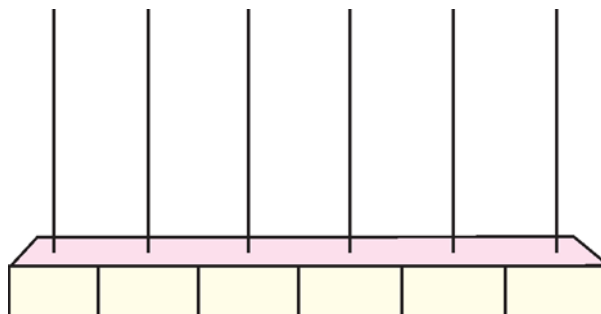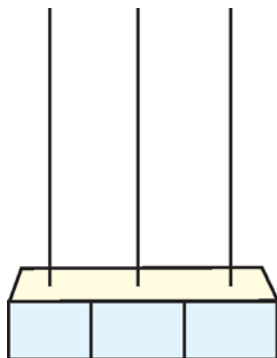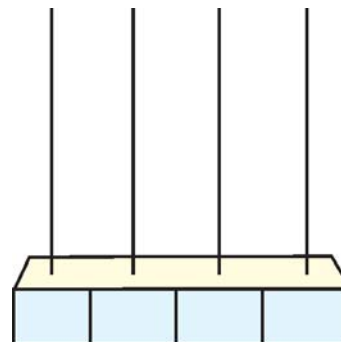
● **Observe carefully :**

**Example 7 :** If 96 chocolates are equally distributed among 8 children; how many chocolates will each child get ?

(**Explanation :** To get the number of chocolates received by each child, 96 will be divided into 8 equal parts. That means 96 is to be divided by 8.)

$$
\begin{array}{r}
12 \\
8 \overline{\smash{)}96} \\
8 \\
\hline
16 \\
16 \\
\hline
00
\end{array}
$$

**Here, the quotient is 12. Hence, each child gets '12' chocolates.**

**Example 8 :** If 386 marbles are equally distributed in 12 bags, at the most how many marbles will each bag contain ? How many marbles will remain after equal distribution ?

(**Explanation :** If 386 marbles are to be equally distributed in 12 bags; we have to divide 386 by 12.)

$$
\begin{array}{r}
32 \\
12 \overline{\smash{)}386} \\
36 \\
\hline
26 \\
24 \\
\hline
02
\end{array}
$$

Quotient is 32, therefore each bag will contain at most 32 marbles.

Remainder is 2, therefore 2 marbles will remain.

**Each bag contains at most 32 marbles and 2 marbles will remain.**

### Practice 5

1. Meera prepares 204 candles to sell. She packs 6 candles in a packet. How many packets will be made ?

2. In *Khel Maha Kumbh* 352 children stand in a row. If 16 children are there in each row, how many rows are formed ?

3. If 115 kites are equally distributed among 7 children; how many kites each of them will get ? How many kites will remain after the distribution ?

**4.** There are 435 pieces of sweets (*penda*); if each packet is to contain 12 pieces, how many packets will be made at the most and how many pieces of sweet will remain ?

**5.** How many necklaces, each containing 17 beads, can be made of 185 beads ? How many beads will remain ?

**6.** How many fortnights are there in 365 days ? How many days are left ? (1 fortnight = 15 days).

☞ **Unitary Method : Purchase and Sale :**

● **Activity 5 :**

Disha and Sanket visited a toy shop. They asked about price of a toy. Shopkeeper told them ₹ 90 for a box of 6 toy cars and ₹ 80 for a box of 5 whistles.

**1.** Disha has purchased 4 toy cars and shopkeeper took ₹ 60.

**How did the shopkeeper calculate ? Let us understand.**

Price of 6 toy cars is ₹ 90.

Therefore price of 1 toy car is $90 \div 6 = ₹ 15$

and hence price of 4 toy cars is $15 \times 4 = ₹ 60$

Thus, he used division to find the price of one toy car. To get the cost of 4 toy cars, he multiplied it with the number of toy cars purchased. This method of finding the cost is called **'Unitary method'**.

> In the unitary method we need to do the division first and then multiplication. Thus we need two operations.

Now find out :

2.   Sanket purchased 3 whistles. How much did he pay to the shopkeeper ?

**Now, observe the following examples and understand :**

**Example 9 :** Maria gives ₹ 96 for one dozen of notebooks, what is the cost of 1 notebook ? (1 dozen = 12 pieces)

Maria purchases one dozen of notebooks. That means she has given ₹ 96 for 12 notebooks. So we have to divide 96 by 12 to know the price of one notebook.

$96 \div 12 = 8$

∴   The price of one notebook is ₹ 8.

```
        8
  12 | 96
      −96
       00
```

**Example 10 :** Krisha makes 7 necklaces having similar number of beads out of 756 beads. How many beads does Ajay require to make 15 such necklaces ?

Total 756 beads for 7 necklaces.

Therefore for 1 necklace number of beads $756 \div 7$

```
      108
  7 | 756
      7
      056
       56
       00
```

∴   Number of beads in 1 necklace = 108

Now number of beads in 1 necklace = 108

Therefore number of beads in 15 necklaces = $108 \times 15$

```
      108
  ×    15
     1080
      540
     1620
```

∴   Number of beads in 15 necklaces = 1620

∴   Ajay required 1620 beads to make 15 necklaces.

## Practice 6

1. **The price of different things are given below the pictures. Find the price of one item accordingly :**

(1)   ₹ 12

(2)   ₹ 20

(3)   ₹ 90

(4)   ₹ 60
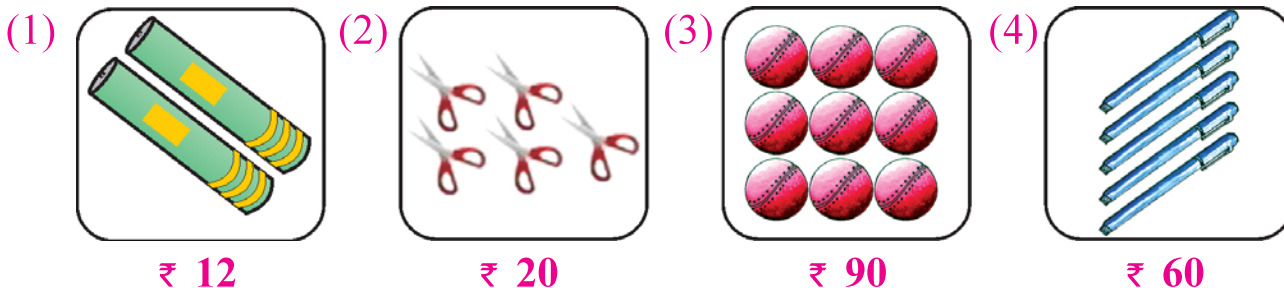
(1) _____  (2) _____  (3) _____  (4) _____

2. Krunal pays ₹ 80 for 1 score of kites. How much did he pay for 1 kite ? (1 score = 20 pieces)

3. Rekhaben buys 12 kg of wheat for ₹ 84. Sofia buys 4 kg of wheat for the same rate. How much will Sofia pay to the shopkeeper ?.

4. A fruit merchant buys 20 boxes of oranges for ₹ 680 and after some days he buys 15 boxes for the same rate. How much he has to pay ?

5. Parag and Chinky visit a stationery shop. The cost of 1 dozen of notebooks is ₹ 120. Parag has purchased 6 notebooks and Chinky has purchased 5 notebooks. How much does Parag pay ? How much does Chinky pay ?

☞ **Practical Examples :**



The celebration of independence day is going on in a primary school at Jagdupur. Teacher has sent some children for shopping. Let us understand their shopping process.

**Example 11 :** Vidhi and Chirag went to purchase festoon (*Toran*) with ₹ 1200. They purchased 35 packets for ₹ 30 per packet. How much money is left with them ?

Price of 1 packet is ₹ 30
Therefore, price of 35 packets
$= 35 \times ₹ 30$

$$\begin{array}{r} 35 \\ \times\ 30 \\ \hline 1050 \end{array}$$

∴  They did shopping for ₹ 1050.

Now, Vidhi and Chirag have ₹ 1200. So, 1050 should be subtracted from 1200.

$$\begin{array}{r} {\scriptstyle 1\ 10} \\ 12\cancel{0}0 \quad ₹\text{ they had} \\ -\ 1050 \quad ₹\text{ for shopping} \\ \hline 150 \quad ₹\text{ left} \end{array}$$

∴  **Vidhi and Chirag are left with ₹ 150**

**Example 12 :** Amir and Rehana were sent to purchase chocolates and compass boxes for giving away prizes. They purchased 12 kg of chocolates at the price of ₹ 165 for 1 kg and compass boxes for ₹ 300. How much did they spend in all ?

First of all we have to find the price of 12 kg of chocolates and then add price of compass box to it.

₹ 165 for 1 kg of chocolate.
Therefore 12 kg of chocolates
costs $12 \times ₹ 165$

$$\begin{array}{r} 165 \\ \times\ 12 \\ \hline 1650 \\ +\ 330 \\ \hline 1980 \end{array}$$

Now cost of chocolates is ₹ 1980 ₹ 300 have been spent for compass boxes. So, we have to add these two amounts.

$$\begin{array}{r} 1980 \quad ₹\text{ for chocolates} \\ +\ 300 \quad ₹\text{ for compass} \\ \hline 2280 \quad ₹\text{ total expenditure} \end{array}$$

**Amir and Rehana had done shopping of ₹ 2280.**

**Example 13 :** The *Sarpanch* of a village Shri Hansaben has given 425 pieces of sweet balls to distribute on Independence day. She has to keep 25 sweet balls for 'Aanganwadi' kids and remaining ones are to be equally distributed among eight classes from standard 1 to 8. How many sweet balls does each class get ?

From 425 sweet balls, 25 sweet balls are kept for 'Aanganwadi' kids. Therefore, 425 – 25 are to be distributed.

$$
\begin{array}{rl}
425 & \text{sweet balls are there} \\
-\ 25 & \text{sweet balls are kept for Aanganwadi kids} \\
\hline
400 & \text{sweet balls remain}
\end{array}
$$

Now, these 400 sweet balls are to be divided into 8 equal parts.
Therefore, 400 ÷ 8 has to be done.

$$
\begin{array}{r}
50 \\
8\,\overline{)\,400} \\
\underline{40\phantom{0}} \\
000
\end{array}
$$

**Thus, each class gets 50 sweet balls.**

### Practice 7

1. Sonal buys 6 litre of milk at the rate of ₹ 35 per litre. She gives a currency note of ₹ 500 to a milkman. How much money will she get back ?

2. Jitendrabhai has purchased 24 *kg* rice at ₹ 35 per *kg*. He gave ₹ 1000 to a shopkeeper. How much money will he get back ?

3. Bakula bought 11 sarees worth ₹ 735 per saree and a dress worth ₹ 800. How much did she spend ?

4. Arifbhai has purchased 4 chairs ₹ 350 per chair and a table worth ₹ 900. How much did he spend ?

5. Nileshbhai has ₹ 2500. He keeps ₹ 700 for himself and distributes the remaining amount equally among his three daughters. How much money does each daughter get ?

6. Hemant has purchased 15 compasses for ₹ 300 and has given 10 compasses to Jagruti at the same rate. How much money does Hemant have to take from Jagruti ?

## Exercise



**Purchase Bill**

| Order | Thing | Quantity | Price (₹) |
|-------|-------|----------|-----------|
| 1. | Sugar | 5 *kg* | 160 |
| 2. | Rice | 10 *kg* | 350 |
| 3. | *Besan* | 5 *kg* | 310 |
| 4. | Groundnut oil | 15 *kg* | 1290 |
| 5. | Ghee | 1 *kg* | – |

1. Gunvantbhai has visited a grocery shop with ₹ 1000 in his wallet. He purchased 4 *kg* of sugar and 10 *kg* of rice. How much money is left with him now ?

2. Nazmaben has purchased 12 *kg* of groundnut oil and 5 *kg* of besan from the same shop. Then how much money does she spent ?

3. Malvikaben had ₹ 2690. She purchased 10 *kg* of groundnut oil and she purchased 6 *kg* of ghee from the remaining amount. Then what is the price of 1 *kg* of ghee ?

> **Make a puzzle of shopping process of**
> **one or two things and find out the solution yourselves.**

## Answers

### Practice 1

1. (1) Dividend : 49, Divisor : 3, Quotient : 16, Remainder : 1
   (2) Dividend : 629, Divisor : 5, Quotient : 125, Remainder : 4

2. (1) Dividend : 75, Divisor : 6, Quotient : 12, Remainder : 3
   (2) Dividend : 67, Divisor : 2, Quotient : 33, Remainder : 1
   (3) Dividend : 95, Divisor : 8, Quotient : 11, Remainder : 7
   (4) Dividend : 90, Divisor : 7, Quotient : 12, Remainder : 6
   (5) Dividend : 105, Divisor : 4, Quotient : 26, Remainder : 1
   (6) Dividend : 100, Divisor : 3, Quotient : 33, Remainder : 1
   (7) Dividend : 208, Divisor : 5, Quotient : 41, Remainder : 3
   (8) Dividend : 500, Divisor : 9, Quotient : 55, Remainder : 5
   (9) Dividend : 49, Divisor : 7, Quotient : 7, Remainder : 0

### Practice 2

1. (1) Quotient : 81, Remainder : 1   (2) Quotient : 69, Remainder : 5
   (3) Quotient : 95, Remainder : 4   (4) Quotient : 143, Remainder : 3
   (5) Quotient : 91, Remainder : 1   (6) Quotient : 169, Remainder : 3
2. (1) Quotient : 80, Remainder : 4   (2) Quotient : 210, Remainder : 1
   (3) Quotient : 90, Remainder : 4

### Practice 3

1. (1) Quotient : 6, Remainder : 0   (2) Quotient : 4, Remainder : 0
   (3) Quotient : 6, Remainder : 0   (4) Quotient : 7, Remainder : 0
   (5) Quotient : 5, Remainder : 0   (6) Quotient : 5, Remainder : 2
   (7) Quotient : 5, Remainder : 7   (8) Quotient : 5, Remainder : 5
   (9) Quotient : 5, Remainder : 1

## Practice 4

1.  (1) Quotient : 11, Remainder : 1   (2) Quotient : 23, Remainder : 5

    (3) Quotient : 34, Remainder : 8   (4) Quotient : 42, Remainder : 7

    (5) Quotient : 23, Remainder : 2   (6) Quotient : 24, Remainder : 7

2.  (1) 26   (2) 19   (3) 33

## Practice 5

1.  34 packets    2. 22 rows    3. 16 kites, 3 kites remain

4.  36 boxes, 3 pieces of sweet    5. 10 necklaces, 15 beads remain

6.  24 fortnight, 5 days

## Practice 6

2.  ₹ 4    3. ₹ 28    4. ₹ 510    5. ₹ 60, ₹ 50

## Practice 7

1.  ₹ 290    2. ₹ 160    3. ₹ 8885    4. ₹ 2300

5.  ₹ 600    6. ₹ 200

## Exercise

1.  ₹ 522    2. ₹ 1342    3. ₹ 305

◆

☞ **Activity 1 : Folding work**

● Take out a paper from the notebook and fold it as shown in the figure below :
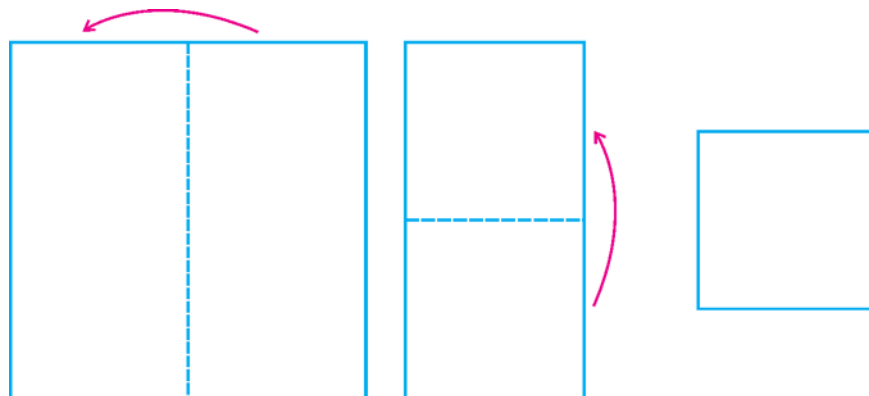
Now, unfold the paper and see. How many parts is the paper divided into ? \_\_\_\_\_

Now, cut $\frac{1}{4}$th part from that paper. (i.e. cut the fourth part)
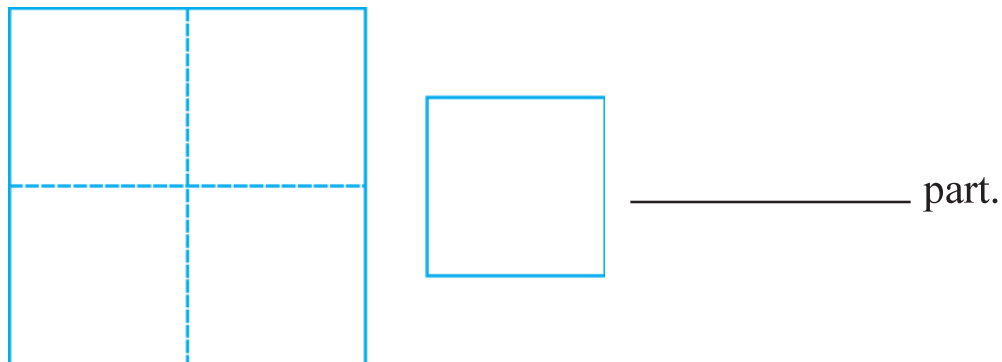
_____ part.

Now, fill in green colour in one of the parts of the remaining paper :
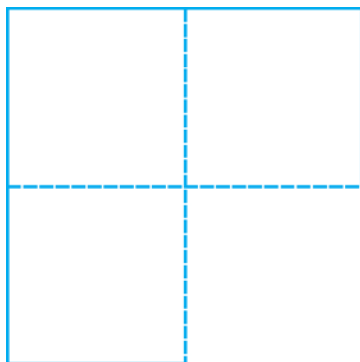
● Write green part in fraction. _____

● Write white part in fraction. _____
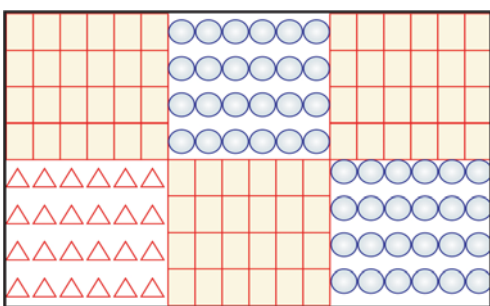
(1) This rectangle is divided into _____ equal parts.

(2) In how many parts ◯ are there ? _____

(3) In how many parts △ are there ? _____

(4) In how many parts ▢ are there ? _____

## Activity 2 :

● If we fold a paper in such a way that it divides it into two equal parts, then...
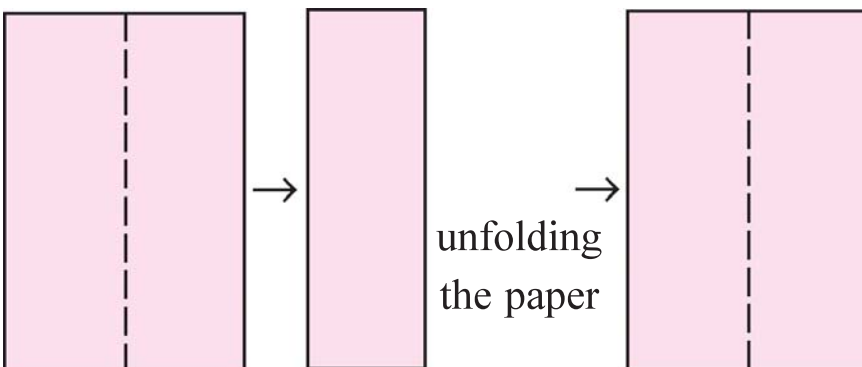
→   unfolding the paper →   Each part shows _____ part of the paper.

● If we fold a square paper in such a way that it divides it into four equal parts, then...
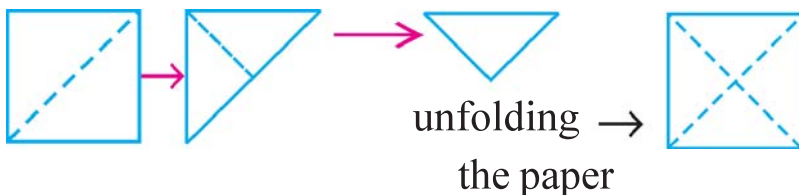
→ → unfolding the paper → Each part shows _____ part of the paper .

● Now, fold a square paper three times in such a way that it divides the paper in equal parts.

● Unfold the paper and see. Each part shows _____ part of the paper .

● Fold a paper four times in such a way that it divides the paper in equal parts. Now each part shows _____ part of the paper .

> In $\frac{1}{2}$, 1 is numerator of fraction and 2 is denominator of fraction. $\frac{1}{2}$ means one part out of two equal parts.

● In $\frac{1}{4}$, _____ is numerator and _____ is denominator.

● In $\frac{3}{16}$, _____ is numerator and _____ is denominator.

**Activity 3 :** Take three papers of similar shape and size.
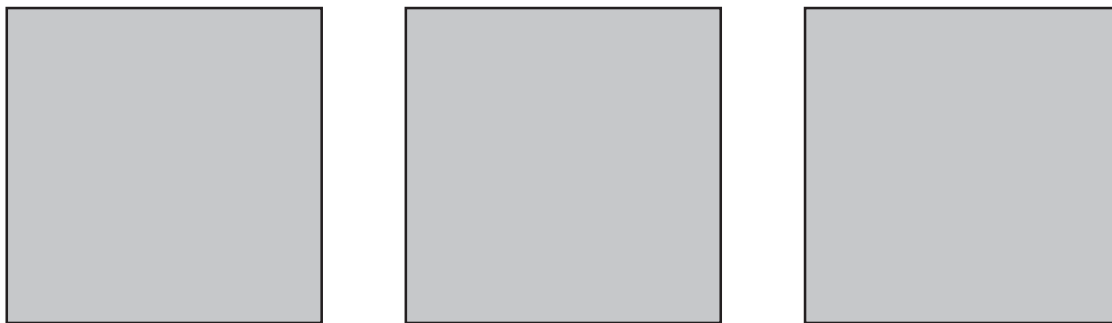
● Fold each paper in such a way that it divides it into four equal parts.

● Fill in colour in one part of the first paper, in two parts of the second paper and in three parts of the third paper.

● Write the coloured part in fraction.

  ● The coloured part of the first paper is _____ .

  ● The coloured part of the second paper is _____ .

  ● The coloured part of the third paper is _____ .

**Here, denominators of each fraction are same. So, these fractions are known as like fractions.** e.g. $\dfrac{1}{4}$, $\dfrac{2}{4}$, $\dfrac{3}{4}$ are like fractions.

Write the coloured part in fraction form from the following figure :
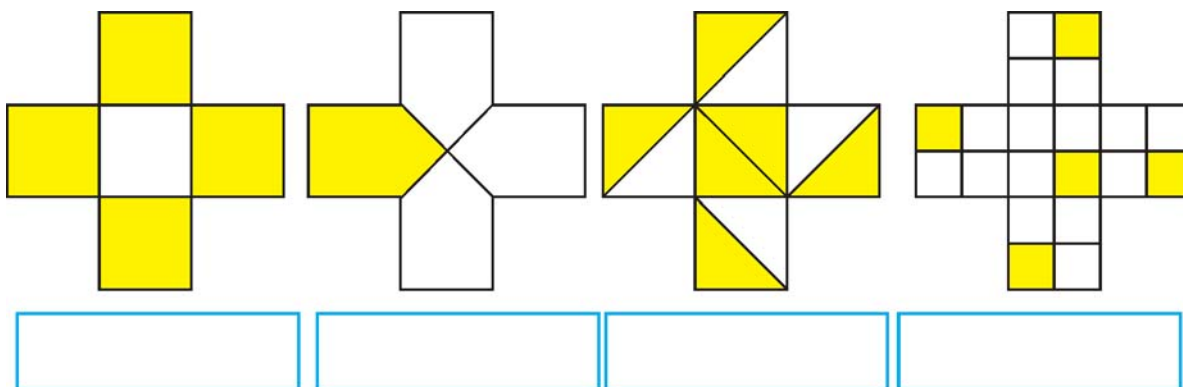
Here, observe the denominator of the fraction written by you. Here, the denominator of any fraction is not same. Therefore, these fractions are called unlike fractions. $\dfrac{4}{7}$, $\dfrac{12}{13}$, $\dfrac{7}{20}$, $\dfrac{6}{11}$, $\dfrac{5}{9}$ and $\dfrac{9}{19}$ are unlike fractions.

☞ **Reading a fraction :**

| Fraction | Fraction read | |
| --- | --- | --- |
| $\frac{1}{2}$ | Half | One upon two |
| $\frac{2}{3}$ | Two third | Two upon three |
| $\frac{3}{4}$ | Three fourth | Three upon four |
| $\frac{4}{5}$ | Four fifth | Four upon five |
| $\frac{1}{6}$ | One sixth | One upon six |
| $\frac{3}{7}$ | Three seventh | Three upon seven |
| $\frac{7}{8}$ | Seven eighth | Seven upon eight |
| $\frac{5}{9}$ | Five ninth | Five upon nine |
| $\frac{9}{10}$ | Nine tenth | Nine upon ten |
| $\frac{6}{11}$ | Six eleventh | Six upon eleven |
| $\frac{5}{13}$ | Five thirteenth | Five upon thirteen |
| $\frac{9}{14}$ | Nine fourteenth | Nine upon fourteen |
| $\frac{13}{15}$ | Thirteen fifteenth | Thirteen upon fifteen |
| $\frac{5}{16}$ | Five sixteenth | Five upon sixteen |

| $\frac{15}{17}$ | Fifteen seventeenth | _____ |
| $\frac{1}{18}$ | One eighteenth | _____ |
| $\frac{3}{19}$ | Three nineteenth | _____ |
| $\frac{17}{20}$ | _____ | _____ |

## Practice 1

1. Write any five fractions. Write numerator and denominator of each fraction.

2. Write the coloured part of the following figure in fraction :

(1)        (2)        (3)        (4)

$\frac{1}{4}$ _____    _____    _____    _____
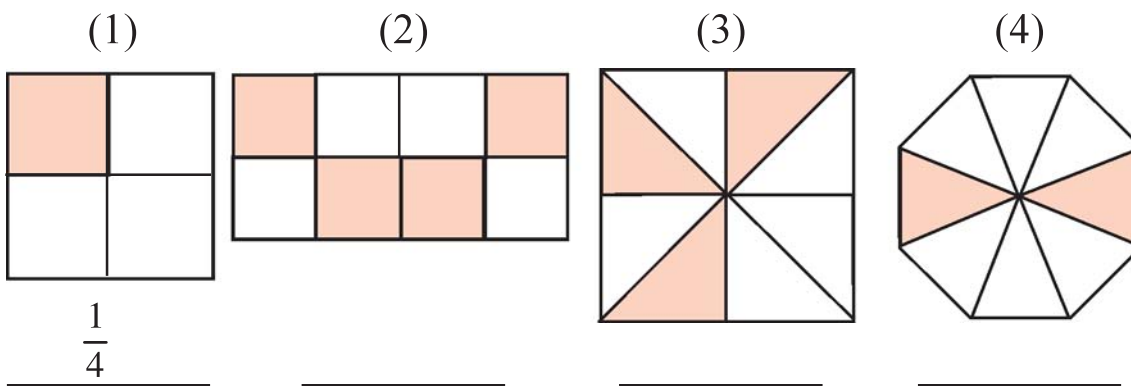
3. Classify :

$\frac{7}{10}$ and $\frac{1}{6}$,  $\frac{2}{9}$ and $\frac{7}{9}$,  $\frac{3}{8}$ and $\frac{5}{8}$,  $\frac{5}{7}$ and $\frac{4}{9}$,  $\frac{6}{7}$ and $\frac{2}{7}$

| Like fractions | Unlike fractions |
|---|---|
|  |  |

4. Write five fractions written by your friend. Now, write those fractions in words.

**Activity 4 :**

- Take four rectangular paper stripes of equal measure.
- Now, fold each stripe in such a way that it is divided into two equal parts.
- Fill orange colour in one part of each of four stripes.
- Now, fold the stripes as per the following instructions and write answers :

| Fold | Unfolding the stripes | Write coloured part in fraction |
|---|---|---|
| • Fold it so that it makes two equal parts. | | _____ |
| • Fold it so that it makes four equal parts. | | _____ |
| • Fold it so that it makes eight equal parts. | | _____ |
| • Fold it so that it makes sixteen equal parts. | | _____ |

Now see, each part $\frac{1}{2}, \frac{2}{4}, \frac{4}{8}$ and $\frac{8}{16}$ is equal.

See the following figure :

$\frac{2}{4}$ part is pink.

**Think...**

$\frac{2}{4}$ part is pink. Can we say that $\frac{1}{2}$ part is pink ?

$\frac{1}{2}$ and $\frac{4}{8}$, $\frac{4}{8}$ and $\frac{8}{16}$, $\frac{3}{4}$ and $\frac{9}{12}$ are called pairs of equivalent fractions.

**Activity 5 :**

- Write $\frac{3}{5}$ in your note.

- Now, multiply that fraction by $\frac{2}{2}, \frac{3}{3}, \frac{4}{4}$ etc. e.g. $\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$.

- What is the result ? See these types of fractions in your friend's book. The fractions that you have got and the fractions that your friend has got are called equivalent fractions.

For example,

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

$$\frac{2}{3} \times \frac{2}{2} = \frac{4}{6}$$

$$\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$$

$$\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$$

$$\frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$$   Thus, $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \frac{8}{12}$ and $\frac{10}{15}$ are equivalent fractions.

To obtain equivalent fractions, multiply fraction by 1. Here, expression of 1 is $\frac{2}{2}, \frac{3}{3}, \frac{4}{4}, \frac{5}{5},...$ etc.

For example,

$$\frac{2}{5} \times 1 = \frac{2}{5}$$

$$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$$   (Expression for 1 is taken as $\frac{2}{2}$)

$$\frac{2}{5} \times \frac{3}{3} = \frac{6}{15}$$   (Expression for 1 is taken as $\frac{3}{3}$)

Thus, $\frac{2}{5}, \frac{4}{10}$ and $\frac{6}{15}$ are equivalent fractions.

## Activity 6 :

☞ **Game :**

(1)

| | | |
|---|---|---|
| $\frac{2}{3}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
| $\frac{1}{4}$ | $\frac{1}{5}$ | $\frac{2}{5}$ |
| $\frac{1}{6}$ | $\frac{3}{5}$ | $\frac{5}{6}$ |

- Take any one of the $\boxed{1}$ , $\boxed{2}$ or $\boxed{3}$ numbered chits and drop it on the table beside.
- Examine which numbered chit falls on which fraction. Multiply the numerator and the denominator of that fraction with that number.
- In this way, obtain two equivalent fractions of all three chits in turn. A player who obtains two equivalent fractions first, is considered a winner.

(2) Obtain two equivalent fractions of $\frac{2}{7}$ and $\frac{4}{5}$.

**Activity 7 :**
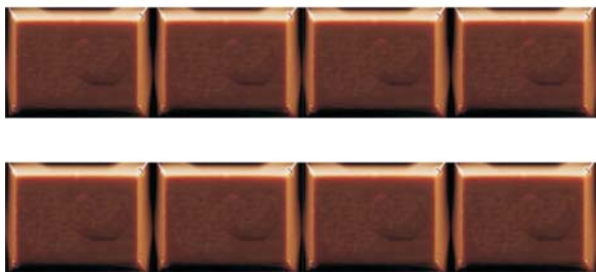
- If Hema eats 1 piece out of 4 equal pieces of a chocolate, then it can be said that she ate $\frac{1}{4}$ of the chocolate.
- If Khushi eats 2 pieces out of 4 equal pieces of a chocolate, then it can be said that she ate $\frac{2}{4}$ of the chocolate.
- If Kavya eats 3 pieces out of 4 equal pieces of a chocolate, then it can be said that she ate $\frac{3}{4}$ of the chocolate.
- If Mushkan eats 4 pieces of 4 equal pieces of a chocolate, then it can be said that she ate 1 chocolate.
- If Akbar eats 4 equal pieces of a chocolate and 1 piece of another chocolate of the same size, then it can be said that he ate $\frac{5}{4}$ chocolates.
- If Tony eats 11 pieces like this, then it can be said that he ate $\frac{11}{4}$ chocolates.

Now say, who ate less than one chocolate and who ate more than one chocolate ?

- $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ are fractions less than 1.

- $\frac{5}{4}$ and $\frac{11}{4}$ are fractions greater than 1.

- $\frac{4}{4}$ is not a fraction, because $\frac{4}{4} = 1$ is a whole number.

> - Fraction which is less than 1 is called a proper fraction.
> - Fraction which is greater than 1 is called an improper fraction.

If Akbar ate 5 pieces of a chocolate, it means he ate $\frac{5}{4}$ chocolates. He ate 1 whole chocolate and $\frac{1}{4}$ of the other chocolate. He ate $\frac{5}{4} = \frac{4}{4} + \frac{1}{4} = 1 + \frac{1}{4} = 1\frac{1}{4}$ chocolates. Understand, $\frac{5}{4} = 1$ whole $+ \frac{1}{4} = 1\frac{1}{4}$. Read : 1 integer and one fourth. $\frac{11}{4} = 2$ whole $+ \frac{3}{4} = 2\frac{3}{4}$. Read : 2 integer and three fourth.

> $1\frac{1}{2}$, $2\frac{3}{4}$ are called mixed fractions.
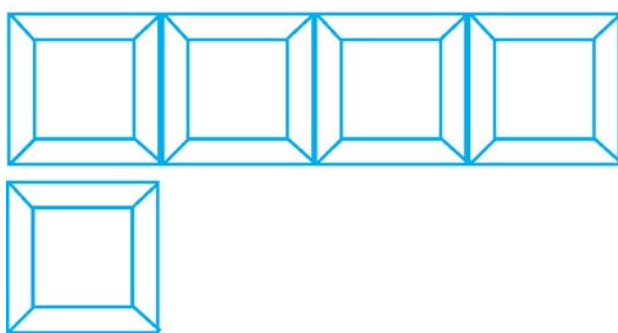
1 chocolate

$\frac{1}{4}$ chocolate

$\left. \right\}$ $1 + \frac{1}{4} = 1\frac{1}{4}$ chocolates

$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{5}{4}$

| Conversion of improper fraction into mixed fraction. | Conversion of mixed fraction into improper fraction |
|---|---|
| Convert $\frac{5}{4}$ into mixed fraction.<br><br>$4\overline{)5}$ $\overset{1}{\phantom{5}}$ $\frac{4}{1}$ $\rightarrow 1\frac{1}{4}$<br><br>Mixed number = Quotient $\frac{\text{Remainder}}{\text{Divisor}}$<br><br>$= 1\frac{1}{4}$ | **First Method :**<br>Convert $1\frac{1}{5}$ into improper fraction.<br><br>(Expression of 1 into $\frac{5}{5}$)<br><br>$1 + \frac{1}{5} = \frac{5}{5} + \frac{1}{5} = \frac{6}{5}$<br><br>**Second Method :**<br>(1) $1\frac{1}{5} = \frac{1\times5+1}{5} = \frac{5+1}{5} = \frac{6}{5}$<br><br>(2) $2\frac{1}{4} = \frac{2\times4+1}{4} = \frac{8+1}{4} = \frac{9}{4}$<br><br>(3) $3\frac{3}{16} = \frac{3\times16+3}{16} = \frac{48+3}{16} = \frac{51}{16}$ |

Thus, as shown in the second method; $1\frac{1}{5}$ means multiplying 1 and 5 we get 5, by adding 1 (numerator) to it we obtain 6. So, improper fraction $\frac{6}{5}$ is obtained.

## Practice 2

1. Classify the following fractions into proper fractions and improper fractions :

$\frac{1}{4}$, $\frac{9}{4}$, $\frac{2}{5}$, $\frac{7}{2}$, $\frac{5}{4}$, $\frac{1}{6}$, $\frac{6}{7}$, $\frac{8}{3}$, $\frac{5}{2}$, $\frac{3}{7}$

2. Convert the following fractions into mixed fractions :

(1) $\frac{5}{4}$ (2) $\frac{7}{3}$ (3) $\frac{9}{5}$ (4) $\frac{17}{8}$ (5) $\frac{27}{13}$

**3.** Convert the following mixed fractions into improper fractions :

(1) $3\frac{2}{3}$   (2) $2\frac{1}{3}$   (3) $4\frac{1}{5}$   (4) $3\frac{5}{6}$   (5) $2\frac{7}{15}$

Rehana filled colour in three parts of the following figure :

 $= \frac{3}{8}$
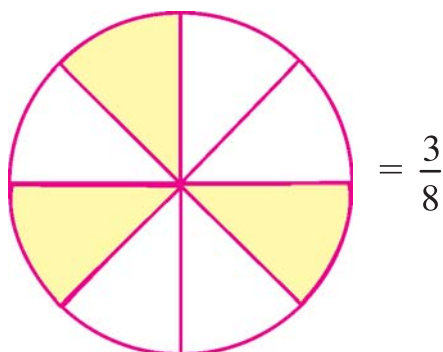
Govind filled colour in five parts of the following figure :

 $= \frac{5}{8}$
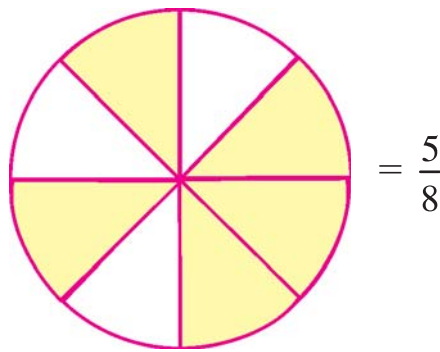
Govind has filled colour in more parts than Rehana did. So, $\frac{5}{8}$ is a greater fraction than $\frac{3}{8}$. It is denoted symbolically as :

(1) $\frac{3}{8} < \frac{5}{8}$   (2) $\frac{5}{8} > \frac{3}{8}$   (Read : $\frac{5}{8}$ is greater than $\frac{3}{8}$).

If both have filled colour in equal number of parts, then...

Then it is said that both filled colours in equal part of the figure.

● Suppose both fill colour in three boxes each, then $\frac{3}{8}$ and $\frac{3}{8}$ are equal.

So, $\frac{3}{8} = \frac{3}{8}$.

Thus, when denominators of two fractions are same, then the fraction having greater numerator is called a greater fraction.

● Arranging in ascending order means, first smallest number and then the smallest from the remaining numbers and like wise.

- Arranging in descending order means, first the largest number of all numbers, then the largest number of remaining numbers and like wise.

**Example 1 :** Arrange $\frac{2}{7}$, $\frac{5}{7}$, $\frac{6}{7}$ and $\frac{4}{7}$ in ascending order.

**Explanation :** Denominators of the four fractions are same and numerators of the fractions are 2, 5, 6, 4. Arranging numerators in ascending order, we get 2, 4, 5, 6.

So, $\frac{2}{7}$, $\frac{4}{7}$, $\frac{5}{7}$ and $\frac{6}{7}$ are in ascending order.

**Example 2 :** Arrange $\frac{5}{19}$, $\frac{17}{19}$, $\frac{13}{19}$, $\frac{3}{19}$, $\frac{11}{19}$ in descending order.

**Explanation :** Here, the denominators are same. So, arranging the numerators in descending order, we get 17, 13, 11, 5 and 3.

So, $\frac{17}{19}$, $\frac{13}{19}$, $\frac{11}{19}$, $\frac{5}{19}$, $\frac{3}{19}$ are in descending order.

**Practice 3**

1. **Fill in the blanks by using proper sign =, < or > :**

(1) $\frac{3}{5}$ —————— $\frac{4}{5}$      (2) $\frac{8}{9}$ —————— $\frac{8}{9}$

(3) $\frac{15}{17}$ —————— $\frac{13}{17}$      (4) $\frac{3}{19}$ —————— $\frac{17}{19}$

(5) $\frac{19}{20}$ —————— $\frac{11}{20}$      (6) $\frac{7}{12}$ —————— $\frac{9}{12}$

**2.** **Arrange the following fractions in ascending order :**

(1) $\dfrac{4}{5}, \dfrac{2}{5}, \dfrac{3}{5}$    (2) $\dfrac{7}{9}, \dfrac{1}{9}, \dfrac{8}{9}, \dfrac{4}{9}$    (3) $\dfrac{5}{11}, \dfrac{10}{11}, \dfrac{9}{11}, \dfrac{3}{11}, \dfrac{7}{11}$

**3.** **Arrange the following fractions in descending order :**

(1) $\dfrac{7}{12}, \dfrac{5}{12}, \dfrac{9}{12}$    (2) $\dfrac{5}{18}, \dfrac{11}{18}, \dfrac{7}{18}, \dfrac{17}{18}$    (3) $\dfrac{11}{14}, \dfrac{3}{14}, \dfrac{9}{14}, \dfrac{13}{14}, \dfrac{5}{14}$

## Exercise

**1.** **Fill in the blanks to make the sentence correct :**

(1) In $\dfrac{3}{8}$ _____ is the numerator and _____ is the denominator.

(2) $\dfrac{3}{7}$ and $\dfrac{5}{7}$ are _____ and _____ fractions.

(3) $\dfrac{3}{11}$ and $\dfrac{5}{9}$ are _____ and _____ fractions.

(4)    and $\dfrac{8}{5}$ are _____ and _____ fractions.

(5) Out of $1\dfrac{2}{3}$, $\dfrac{4}{7}$ and $\dfrac{11}{9}$ _____ is/are proper fraction/s and _____ is/are mixed fraction/s.

**2.** Your friend will dictate 10 fractions to you. Classify these fractions into like fractions and unlike fractions.

**3.** **Obtain two equivalent fractions of following fractions :**

(1) $\dfrac{2}{3}$    (2) $\dfrac{3}{5}$    (3) $\dfrac{5}{6}$    (4) $\dfrac{3}{4}$

**4.** Classify the following fractions into proper fractions and improper fractions :

$\dfrac{7}{5}, \dfrac{3}{4}, \dfrac{5}{7}, \dfrac{9}{4}, \dfrac{12}{13}, \dfrac{14}{17}, \dfrac{25}{11}, \dfrac{1}{9}, \dfrac{10}{7}, \dfrac{26}{16}, \dfrac{19}{20}$

**5.** Convert the following fractions into mixed numbers :

(1) $\dfrac{7}{2}$    (2) $\dfrac{8}{3}$    (3) $\dfrac{17}{5}$    (4) $\dfrac{17}{9}$    (5) $\dfrac{39}{17}$

**6.** Convert the following mixed numbers into improper fractions :

(1) $2\dfrac{1}{2}$    (2) $4\dfrac{2}{3}$    (3) $7\dfrac{2}{5}$    (4) $3\dfrac{9}{11}$    (5) $2\dfrac{11}{16}$

**7.** Put proper sign from =, < or > in between the following fractions :

(1) $\dfrac{3}{7}$ _____ $\dfrac{5}{7}$           (2) $\dfrac{13}{20}$ _____ $\dfrac{13}{20}$

(3) $\dfrac{7}{13}$ _____ $\dfrac{6}{13}$           (4) $\dfrac{5}{18}$ _____ $\dfrac{17}{18}$

**8.** Arrange the following fractions into ascending order :

(1) $\dfrac{3}{11}, \dfrac{9}{11}, \dfrac{6}{11}, \dfrac{2}{11}$           (2) $\dfrac{9}{13}, \dfrac{7}{13}, \dfrac{11}{13}, \dfrac{6}{13}, \dfrac{2}{13}$

**9.** Arrange the following fractions into descending order :

(1) $\dfrac{9}{16}, \dfrac{7}{16}, \dfrac{5}{16}, \dfrac{13}{16}, \dfrac{3}{16}$           (2) $\dfrac{5}{19}, \dfrac{6}{19}, \dfrac{17}{19}, \dfrac{12}{19}, \dfrac{3}{19}$

**10.** Draw 20 equal sized square boxes in your notebook; now, fill red colour in 5 boxes, yellow in 7 boxes and green in 8 boxes. How much part of the figure each colour is ? Write down in your notebook.

**Answers**
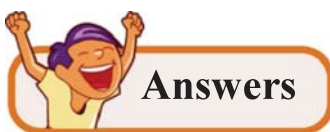
**Practice 1**

**2.**  (2) $\dfrac{4}{8}$    (3) $\dfrac{3}{8}$    (4) $\dfrac{2}{8}$

**3.** Like fractions   : $\dfrac{2}{9}$ and $\dfrac{7}{9}$, $\dfrac{3}{8}$ and $\dfrac{5}{8}$, $\dfrac{6}{7}$ and $\dfrac{2}{7}$

Unlike fractions : $\dfrac{7}{10}$ and $\dfrac{1}{6}$, $\dfrac{5}{7}$ and $\dfrac{4}{9}$

## Practice 2

**1.** Proper fractions : $\dfrac{1}{4}, \dfrac{2}{5}, \dfrac{1}{6}, \dfrac{6}{7}, \dfrac{3}{7}$;   Improper fractions : $\dfrac{9}{4}, \dfrac{7}{2}, \dfrac{5}{4}, \dfrac{8}{3}, \dfrac{5}{2}$

**2.** (1) $1\dfrac{1}{4}$   (2) $2\dfrac{1}{3}$   (3) $1\dfrac{4}{5}$   (4) $2\dfrac{1}{8}$   (5) $2\dfrac{1}{13}$

**3.** (1) $\dfrac{11}{3}$   (2) $\dfrac{7}{3}$   (3) $\dfrac{21}{5}$   (4) $\dfrac{23}{6}$   (5) $\dfrac{37}{15}$

## Practice 3

**1.** (1) $<$   (2) $=$   (3) $>$   (4) $<$   (5) $>$   (6) $<$

**2.** (1) $\dfrac{2}{5}, \dfrac{3}{5}, \dfrac{4}{5}$   (2) $\dfrac{1}{9}, \dfrac{4}{9}, \dfrac{7}{9}, \dfrac{8}{9}$   (3) $\dfrac{3}{11}, \dfrac{5}{11}, \dfrac{7}{11}, \dfrac{9}{11}, \dfrac{10}{11}$

**3.** (1) $\dfrac{9}{12}, \dfrac{7}{12}, \dfrac{5}{12}$   (2) $\dfrac{17}{18}, \dfrac{11}{18}, \dfrac{7}{18}, \dfrac{5}{18}$   (3) $\dfrac{13}{14}, \dfrac{11}{14}, \dfrac{9}{14}, \dfrac{5}{14}, \dfrac{3}{14}$

## Exercise

**1.** (1) 3, 8   (2) proper, like

(3) proper, unlike

(4) Improper, like   (5) $\dfrac{4}{7}$, $1\dfrac{2}{3}$

**4.** Proper fractions : $\dfrac{3}{4}, \dfrac{5}{7}, \dfrac{12}{13}, \dfrac{14}{17}, \dfrac{1}{9}, \dfrac{19}{20}$

Improper fractions : $\dfrac{7}{5}, \dfrac{9}{4}, \dfrac{25}{11}, \dfrac{10}{7}, \dfrac{26}{16}$

**5.** (1) $3\frac{1}{2}$    (2) $2\frac{2}{3}$    (3) $3\frac{2}{5}$    (4) $1\frac{8}{9}$    (5) $2\frac{5}{17}$

**6.** (1) $\frac{5}{2}$    (2) $\frac{14}{3}$    (3) $\frac{37}{5}$    (4) $\frac{42}{11}$    (5) $\frac{43}{16}$

**7.** (1) $<$    (2) $=$    (3) $>$    (4) $<$

**8.** (1) $\frac{2}{11}, \frac{3}{11}, \frac{6}{11}, \frac{9}{11}$      (2) $\frac{2}{13}, \frac{6}{13}, \frac{7}{13}, \frac{9}{13}, \frac{11}{13}$

**9.** (1) $\frac{13}{16}, \frac{9}{16}, \frac{7}{16}, \frac{5}{16}, \frac{3}{16}$      (2) $\frac{17}{19}, \frac{12}{19}, \frac{6}{19}, \frac{5}{19}, \frac{3}{19}$
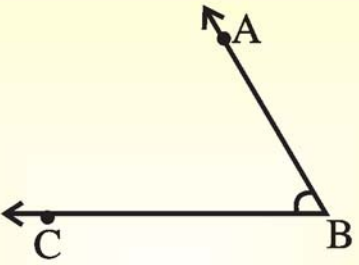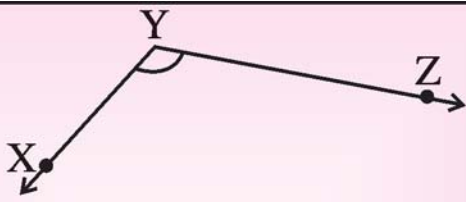
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# Revision : 3
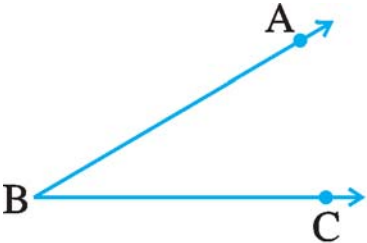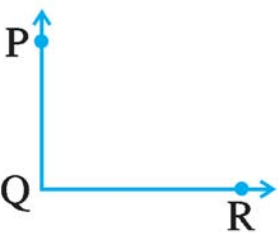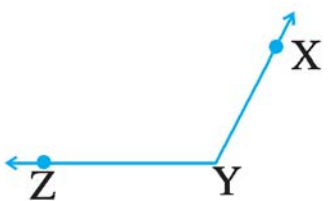
1. **Fill in the blanks :**

   (1) Vertex of ∠XYZ is _____ .

   (2) In ∠ABC _____ and _____ are arms.

   (3) If $m∠ABC = 30^o$, then it is an _____ angle.

   (4) An angle having measure $90^o$ is known as _____ .

   (5) Measure of _____ is between $0^o$ and $90^o$.

2. **Write the following angles in three ways and give their types :**

   (1)

   (2)

   _____

   _____

   _____

   _____

3. **Write the measure of the following angles with protractor :**

   (1)                    (2)                    (3)

   _____        _____        _____

4. **The measure of some angles are given. Write types of angle accordingly :**

(1) $m\angle ABC = 60^\circ$ _____

(2) $m\angle XYZ = 170^\circ$ _____

(3) $m\angle GBP = 30^\circ$ _____

(4) $m\angle HJG = 90^\circ$ _____

(5) $m\angle MGS = 75^\circ$ _____

5. **Answer the following questions, by selecting proper option :**

(1) In $\triangle ABC$, $m\angle BAC = 90^\circ$, $m\angle ABC = 40^\circ$ and $m\angle ACB = 50^\circ$, then which type is $\triangle ABC$ ?

   (i)  Right angled triangle       (ii) Obtuse angled triangle

   (iii) Acute angled triangle      (iv) Equilateral triangle

(2) In $\triangle XYZ$, $m\angle XYZ = 30^\circ$, $m\angle XZY = 80^\circ$ and $m\angle YXZ = 70^\circ$, then which type is $\triangle XYZ$ ?

   (i)  Right angled triangle       (ii) Obtuse angled triangle

   (iii) Acute angled triangle      (iv) Equilateral triangle

(3) In $\triangle PQR$, $m\angle PQR = 120^\circ$, $m\angle QPR = 30^\circ$ and $m\angle PRQ = 30^\circ$, then which type is $\triangle PQR$ ?

   (i)  Right angled triangle       (ii) Obtuse angled triangle

   (iii) Acute angled triangle      (iv) Equilateral triangle

(4) In $\triangle ABC$ AB = 4 *cm*, BC = 5 *cm*, CA = 6 *cm*, then which type is $\triangle ABC$ ?

   (i)  Equilateral triangle       (ii) Scalene triangle

   (iii) Isosceles triangle       (iv) Right angled triangle

(5) In ΔPQR, PQ = 6 *cm*, QR = 3 *cm*, RP = 6 *cm*, then which type is ΔPQR ?

(i) Equilateral triangle  (ii) Scalene triangle

(iii) Isosceles triangle  (iv) Right angled triangle

**6.** **See the division, understand it and write dividend, divisor and quotient in the table :**

| No. | | Dividend | Divisor | Quotient |
| --- | --- | --- | --- | --- |
| (1) | $208 \div 8 = 26$ | | | |
| (2) | $364 \div 26 = 14$ | | | |
| (3) | $600 \div 15 = 40$ | | | |
| (4) | $320 \div 16 = 20$ | | | |
| (5) | $462 \div 14 = 33$ | | | |

**7.** **Perform the following division and find quotient and remainder :**

(1) $568 \div 14$  (2) $370 \div 17$  (3) $590 \div 18$

(4) $630 \div 12$  (5) $740 \div 13$  (6) $382 \div 19$

**8.** Jaykumar bought 27 *kg* of *mung dal* at the rate of ₹ 18. He gave ₹ 1000 to the merchant. How much money did he get back ?

**9.** Priyanshi bought 14 dresses at the rate of ₹ 645 per piece and a saree of ₹ 500. How much money did she spend ?

**10. Fill in the blanks to make the sentence correct :**

(1) In $\dfrac{3}{8}$ _____ is the numerator and _____ is the denominator.

(2) In words $\dfrac{5}{11}$ is written as _____ .

(3) In [ ][ ][ ][▓] white parts are written as _____ in fraction.

(4) $\dfrac{7}{9}$ and $\dfrac{5}{9}$ are _____ and _____ fractions.

(5) $\dfrac{1}{2}$ and $\dfrac{5}{10}$ are _____ and _____ fractions.

**11. Find like fractions from the following :**

$$\dfrac{3}{5}, \; \dfrac{9}{11}, \; \dfrac{7}{11}, \; \dfrac{3}{7}, \; \dfrac{10}{11}, \; \dfrac{5}{9}, \; \dfrac{8}{11}, \; \dfrac{3}{11}$$

**12.** Write two equivalent fractions of $\dfrac{3}{4}$ and $\dfrac{5}{6}$.

**13.** Classify the following fractions into proper and improper fractions :

$$\dfrac{1}{2}, \; \dfrac{3}{2}, \; \dfrac{7}{5}, \; \dfrac{11}{13}, \; \dfrac{5}{3}, \; \dfrac{19}{20}, \; \dfrac{17}{4}, \; \dfrac{9}{10}$$

**14. Select proper option and write in the [ ] .**

(1) What is obtained while converting $\dfrac{7}{5}$ into mixed fraction ?   [ ]

(a) $5\dfrac{2}{1}$      (b) $1\dfrac{1}{5}$      (c) $1\dfrac{2}{5}$      (d) $1\dfrac{5}{2}$

(2) Which is improper fraction from the following ?   [ ]

(a) $\dfrac{17}{19}$      (b) $\dfrac{10}{11}$      (c) $\dfrac{3}{4}$      (d) $\dfrac{7}{3}$

(3) Which is the proper fraction from the following ?

(a) $\frac{13}{15}$  (b) $\frac{9}{3}$  (c) $\frac{8}{5}$  (d) $\frac{12}{7}$

(4) How to write $4\frac{1}{5}$ as improper fraction ?

(a) $\frac{5}{21}$  (b) $\frac{21}{5}$  (c) $\frac{20}{5}$  (d) $\frac{9}{5}$

(5) What is the descending order of $\frac{3}{4}, \frac{1}{4}, \frac{2}{4}$ ?

(a) $\frac{3}{4}, \frac{1}{4}, \frac{2}{4}$  (b) $\frac{3}{4}, \frac{2}{4}, \frac{1}{4}$  (c) $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}$  (d) $\frac{1}{4}, \frac{3}{4}, \frac{2}{4}$

**Answers**

1. (1) Y  (2) $\overrightarrow{BA}$ and $\overrightarrow{BC}$  (3) Acute angle  (4) Right angle  (5) Acute angle

2. (1) ∠ABC, ∠CBA, ∠B, Acute angle  (2) ∠XYZ, ∠ZYX, ∠Y, Obtuse angle

4. (1) Acute angle  (2) Obtuse angle  (3) Acute angle  (4) Right angle
   (5) Acute angle

5. (1) → (i)  (2) → (iii)  (3) → (ii)  (4) → (ii)  (5) → (iii)

6.

| No. | Dividend | Divisor | Quotient |
|---|---|---|---|
| (1) | 208 | 8 | 26 |
| (2) | 364 | 26 | 14 |
| (3) | 600 | 15 | 40 |
| (4) | 320 | 16 | 20 |
| (5) | 462 | 14 | 33 |

**7.** (1) Quotient : 40　　Remainder : 8

(2) Quotient : 21　　Remainder : 13

(3) Quotient : 32　　Remainder : 14

(4) Quotient : 52　　Remainder : 6

(5) Quotient : 56　　Remainder : 12

(6) Quotient : 20　　Remainder : 2

**8.** He got ₹ 514 back.

**9.** Total expense ₹ 9530.

**10.** (1) 3, 8　　(2) Five upon eleven / Five elevenths　(3) $\frac{3}{4}$

(4) proper, like

(5) unlike, proper

**11.** $\frac{9}{11}$, $\frac{7}{11}$, $\frac{10}{11}$, $\frac{8}{11}$, $\frac{3}{11}$

**12.** Equivalent fractions of $\frac{3}{4}$ and $\frac{6}{8}$, $\frac{9}{12}$,...

Equivalent fractions of $\frac{5}{6}$ and $\frac{10}{12}$, $\frac{15}{18}$,...

**13.** Proper fractions : $\frac{1}{2}$, $\frac{11}{13}$, $\frac{19}{20}$, $\frac{9}{10}$;　Improper fractions : $\frac{3}{2}$, $\frac{7}{5}$, $\frac{5}{3}$, $\frac{17}{4}$

**14.** (1) → c　　(2) → d　　(3) → a　　(4) → b　　(5) → b

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