

New ERA PUBLIC SCHOOL

CLASS: $\rightarrow$ 5th

SUBJECT: $\rightarrow$ MATH

Solved Assignment of UNIT 1st

SESSION 2021-2022

MATH 'A' [Ex-1.1-1.8]

Exercise: 1.1

Q.No.1: $\rightarrow$ Separate the periods of the following using commas.

(a) 6875834

sol:- 68,75,834

(b) 8935514

sol:- 89,35,514

(c) 31215081

sol:- 3,12,15,081

(d) 52578974

sol:- 5,25,78,974

Q.No.2: $\rightarrow$ Draw a place value chart, and write the digits under the correct places in each of the following.

(a) 9,45,098

sol:-

Crores		Lakhs		Thousands		Ones		
C	TL	L	TTh	Th	H	T	O	
		9	4	5	0	9	8	

(b) 35,00,900

sol:-

Crores		Lakhs		Thousands		Ones		
C	TL	L	TTh	Th	H	T	O	
		3	5	0	0	9	0	0

(c) 1,49,33,254

sol:-

Crores		Lakhs		Thousands		Ones		
C	TL	L	TTh	Th	H	T	O	
1		4	9	3	3	2	5	4

(d) 5,65,54,454.

Sol.	Crores	Lakhs		Thousands		Ones		
	C	TL	L	TTh	Th	H	T	O
	5	,	6	5	,	5	4	4

Q.No.3: → Write the names for each of the following.

(a) 45,890

Sol:- Forty Five thousands, eight hundred and ninety.

(b) 3,56,900

Sol:- Three lakhs, fifty-six thousands and nine hundred.

(c) 6,74,008.

Sol:- Six lakhs, Seventy-four thousands and eight.

(d) 5,34,90,099.

Sol:- Five Crore, thirty-four lakhs, ninety-nine.

Q.No.4: → Write the numerals for each of the following.

(a) Sixty-two lakh Seventy-five thousand four hundred and nineteen.

Sol:-	Crores	Lakhs		Thousands		Ones		
	C	TL	L	TTh	Th	H	T	O
		6	2	7	5	4	1	9

(c) Seventy-five lakh two thousand four hundred and sixteen.

Sol:-

Crores	Lakhs		Thousands		Ones		
C	TL	L	TTh	Th	H	T	O
	7	5	0	2	4	1	6

(e) Seven crore ninety-one lakh twenty thousand five hundred and sixty-nine.

Sol:-

Crores	Lakhs		Thousands		Ones		
C	TL	L	TTh	Th	H	T	O
7	9	1	2	0	5	6	9

Q.No. 5:- Counting by hundreds, Write 10 numbers from 4,30,550 to 4,31,650.

Sol:-

4,30,650	4,30,750
4,30,850	4,30,950
4,31,050	4,31,150
4,31,250	4,31,350
4,31,450	4,31,550.

Exercise:- 1.2

Q.No. 1:- Find the face values and place values of the coloured digits in each of the following.

(a)

C	TL	L	TTh	Th	H	T	O
		3	6	8	5	7	4

Sol:- Face value of 5 = 5
Place value of 5 = 500.

(c)	C	TL	L	TTh	Th	H	T	O
		2	9	<u>0</u>	8	7	2	1

Sol:- Face value of 0 = 0

Place value of 0 = 0

(e)	C	TL	L	TTh	Th	H	T	O
	1	6	5	8	7	6	<u>4</u>	9

Sol:- Face value of 4 = 4

Place value of 4 = 40

Q.No.2:- Find the place values of each digit in each of the following.

(a) 30,21,091

Sol:- Place value :-

3 = 30,00,000 ; 0 = 0 ; 2 = 20,000.
0 = 0 ; 9 = 90 ; 1 = 1.

(b) 6,60,89,645.

Sol:- Place value of :-

6 = 6,00,00,000 ; 6 = 60,00,000.
0 = 0 ; 8 = 80,000 ; 9 = 9,000.
6 = 600 ; 4 = 40 ; 5 = 5.

(c) 86,26,91,487.

Sol:- Place value of :-

8 = 80,00,00,000 ; 6 = 6,00,00,000
2 = 20,00,000 ; 6 = 6,00,000 ;
9 = 90,000 ; 1 = 1,000 ;
4 = 400 ; 8 = 80 ; 7 = 7.

(d) 27, 90, 86, 234.

Sol:- Place value of :-

$$2 = 20,00,00,000 ; 7 = 7,00,00,000 ;$$

$$9 = 90,00,000 ; 0 = 0 ; 8 = 80,000$$

$$6 = 6,000 ; 2 = 200 ; 3 = 30$$

$$4 = 4.$$

Q.No.3:- Find the sums of the place values of the coloured digits in each of the following.

(a) 685438

Sol:- The place value of 6 = $6 \times 1,00,000$
 $= 6,00,000$

The place value of 3 = 3×10
 $= 30$

The sum of the place values = $6,00,000$
 $+ 30$
 $= \underline{6,00,030}$

(c) 202487

Sol:- The place value of 2 = $2 \times 1,00,000$
 $= 2,00,000$

The place value of 8 = 8×10
 $= 80$

The sum of the place values = $2,00,000$
 $+ 80$
 $= \underline{2,00,080}$

(e) 635089

Sol:- The place value of 5 = $5 \times 1,000$
 $= 5,000$

The place value of 8 = 8×10
= 80

The sum of the place values = $\begin{array}{r} 5,000 \\ + 80 \\ \hline 5,080 \end{array}$

Q.No. 4: → Find the differences of the place values of the coloured digits in each of the following.

(a) 6 2 2 5 4 7 8

Sol:- The place value of 5 = $5 \times 1,000$
= 5,000

The place value of 8 = 8.

The difference of the place values =
 $1,000 - 8 = 992$

(b) 2 6 2 8 4 9 1 2

Sol:- The place value of 6 = $6 \times 10,000,000$
= 60,000,000

The place value of 9 = 9×100
= 900

The difference of the place value =
 $60,000,000 - 900 = 59,999,100$

(c) 4 3 9 7 6 2 5 8

Sol:- The place value of 9 = $9 \times 1,000,000$
= 9,000,000

The place value of 8 = 8

The difference of the place values =
 $9,000,000 - 8 = 8,999,992$

(d) 135826750

Sol:- The place value of 8 = 8×100000
 $= 800000$

The place value of 0 = 0

The difference of the place values =
 $800000 - 0 = 80,000$

Exercise :- 1.3

Q.No.1:- In the following numbers, mark the periods with commas and write the names in both the Indian and International systems of numeration.

(a) 508965

Sol:- (i) Indian System : 5,08,965

Five lakh eight thousand nine hundred and Sixty-Five

(ii) International System : 508,965

Five hundred eight thousand nine hundred and Sixty-Five.

(b) 3490862

Sol:- (i) Indian System : 34,90,862

Thirty-Four lakh ninety thousand eight hundred and Sixty-two.

(ii) International System : 3,490,862

Three million Four hundred ninety thousand eight hundred and Sixty-two.

(c) 7000000

Sol: (i) Indian system : 70,00,000

Seventy lakh.

(ii) International system : 7,000,000

Seven million.

(d) 26005854.

Sol: (i) Indian system :- 2,60,05,854

Two Crore Sixty lakh five thousand eight hundred and fifty-four.

Q.No.2: → Write the numerals for the following names.

(a) Seven Crore twenty-eight lakh fifty-four thousand two hundred and fifty-four

Sol:- 7,28,54,254.

(c) Nineteen Crore two lakh twenty thousand and two hundred.

Sol:- 19,02,20,200

(e) Forty-two Crore twelve lakh fifty-three thousand Six hundred and ninety-nine.

Sol:- 42,12,53,699.

Q.No 3: → Write the following numbers in

the Indian and International place value charts.

Sol: (a) Largest number of 7 digits.

Sol: Indian place value chart.

Crore		Lakhs		Thousands		Ones		
Tc	C	TL	L	TTh	Th	H	T	O
		9	9	9	9	9	9	9

International place value chart

Millions			Thousands			Ones		
HM	TM	M	HTh	TTh	Th	H	T	O
		9	9	9	9	9	9	9

(b) Largest number of 8 digits

Sol: Indian place value chart.

Crore		Lakhs		Thousands		Ones		
Tc	C	TL	L	TTh	Th	H	T	O
	9	9	9	9	9	9	9	9

International place value chart

Millions			Thousands			Ones		
HM	TM	M	HTh	TTh	Th	H	T	O
	9	9	9	9	9	9	9	9

(c) Largest number of 9 digits.

Sol: Indian place value chart.

Crore		Lakhs		Thousands		Ones		
Tc	C	TL	L	TTh	Th	H	T	O
	9	9	9	9	9	9	9	9

International Place value chart

Millions			Thousands			Ones		
HM	TM	M	HTh	TTh	Th	H	T	O
9	9	9	9	9	9	9	9	9

Exercise:- 1.4

Q.No.1:- → Insert commas and expand the following numbers.

(a) 820888.

Sol: $8,20,888 = 8,00,000 + 20,000 + 800 + 80 + 8.$

(b) 2345671

Sol: $23,45,671 = 20,00,000 + 3,00,000 + 40,000 + 5,000 + 600 + 70 + 1$

(c) 42732018

Sol: $4,27,32,018 = 4,00,00,000 + 20,00,000 + 7,00,000 + 30,000 + 2,000 + 10 + 8.$

(d) 743012952

Sol: $74,30,12,952 = 70,00,00,000 + 4,00,00,000 + 30,00,000 + 10,000 + 2,000 + 900 + 50 + 2$

Q.No.2:- Write each of the following numbers in expanded form and in words

(a) 32,95,726

Sol: $30,00,000 + 2,00,000 + 90,000 + 5,000 + 700 + 20 + 6$

Thirty-two lakh ninety-five thousand
Seven hundred and twenty-six

(b) 54,40,069

Sol: $50,00,000 + 4,00,000 + 40,000 + 60 + 9$

Fifty-four lakh forty thousand and sixty-nine.

(c) 3,75,82,492

Sol: $3,00,00,000 + 70,00,000 + 5,00,000 + 80,000 + 2,000 + 400 + 90 + 2$

Three crore seventy-five lakh eighty-two thousand four hundred and ninety-two.

(d) 2,80,76,924

Sol: $2,00,00,000 + 80,00,000 + 70,000 + 6,000 + 900 + 20 + 4$

Two crore eighty lakh seventy-six thousand nine hundred twenty-four.

Q.No. 3: → Express the following in Standard form.

(a) $60,000 + 600 + 50 + 4$

Sol: 60,654

(b) $1,00,000 + 70,000 + 8,000 + 900 + 80 + 5$

Sol: 1,78,985

(c) $90,00,000 + 6,00,000 + 900 + 3$

Sol: 96,00,903

(d) $70,00,000 + 8,00,000 + 7,000 + 50$

sol: $78,07,050$

(e) $40,00,00,000 + 6,00,000 + 4,000 + 700 + 9$

sol: $40,06,04,709$

Q.No. 4: $\rightarrow$ Write the following numbers in the international system of numeration and expand them all.

(a) 4312354

sol: $4,312,354 = 4 \text{ millions} + 3 \text{ hundred thousands} + 1 \text{ ten thousand} + 2 \text{ thousands} + 3 \text{ hundreds} + 5 \text{ tens} + 4 \text{ ones}$.

(b) 76457998

sol: $76,457,998 = 7 \text{ ten millions} + 6 \text{ millions} + 4 \text{ hundred thousands} + 5 \text{ ten thousands} + 7 \text{ thousands} + 9 \text{ hundreds} + 9 \text{ tens} + 8 \text{ ones}$.

(c) 9520618

sol: $9,520,618 = 9 \text{ millions} + 5 \text{ hundred thousands} + 2 \text{ ten thousands} + 6 \text{ hundreds} + 1 \text{ tens} + 8 \text{ ones}$.

(d) 267260831

sol: $267,260,831 = 2 \text{ hundred millions} + 6 \text{ ten millions} + 7 \text{ millions} + 2 \text{ hundred thousands} + 6 \text{ ten thousands} + 8 \text{ hundreds} + 3 \text{ tens} + 1 \text{ ones}$.

Exercise :- 1.5.

Q.No.1: $\rightarrow$ Write the predecessors of each of the following.

(a) 5,22,32,490

$$\begin{array}{r} \text{sol: Predecessor of } 5,22,32,490 = 5,22,32,490 \\ - \quad \quad \quad 1 \\ \hline 5,22,32,489 \end{array}$$

(b) 89,70,000

$$\begin{array}{r} \text{sol: Predecessor of } 89,70,000 = 89,70,000 - 1 \\ = 89,69,999 \end{array}$$

(c) 52,08,300

$$\begin{array}{r} \text{sol: Predecessor of } 52,08,300 = 52,08,300 - 1 \\ = 52,08,299 \end{array}$$

(d) 4,23,88,777

$$\begin{array}{r} \text{sol: Predecessor of } 4,23,88,777 = 4,23,88,777 - 1 \\ = 4,23,88,776 \end{array}$$

Q.No.2: $\rightarrow$ Write the successors of each of the following.

(a) 6,26,979

$$\begin{array}{r} \text{sol: Successor of } 6,26,979 = 6,26,979 + 1 \\ = 6,26,980 \end{array}$$

(b) 27,63,599

$$\begin{array}{r} \text{sol: Successor of } 27,63,599 = 27,63,599 + 1 \\ = 27,63,600 \end{array}$$

(c) 45,89,888

$$\text{sol: Successor of } 45,89,888 = 45,89,888 + 1$$

$$= 45,89,889.$$

(d) 27,68,88,999

Sol: Successor of 27,68,88,999 = $27,68,88,999 + 1$
 $= 27,68,89,000$

Q.No.3: → Observe the following patterns and fill in the blanks.

(a) 87,28,602 ; 87,28,603 ; 87,28,604 ;
 87,28,605.

(b) 33,30,815 ; 33,30,816 ; 33,30,817 ;
 33,30,818.

(c) 9,41,43,243 ; 9,41,43,244 ; 9,41,43,245 ;
9,41,43,246.

Exercise :→ 1.6

Q.No.1: → Choose the correct symbol ('>', '<', or '=') and fill in the boxes.

(a) 23,345 > 22,435

(b) 3,45,236 = 3,45,236

(c) 41,30,725 < 61,30,720

(d) 27,48,013 > 2,74,819

(e) 2,39,63,733 < 3,39,17,054.

Q.No.2: → Insert commas and compare using '>', '<', or '='.

(a) 6,28,765 < 6,82,675

(b) 27,04,897 > 17,08,940

(c) 3,62,34,515 < 3,62,35,415

$$(d) \ 48,29,704 > 47,04,892$$

$$(e) \ 37408920 = 37408920$$

Q.No.3: $\rightarrow$ Insert commas and arrange the following numbers in ascending and descending order.

$$(a) \ 29654, 40865, 39572, 109754$$

Sol: Ascending order:

$$29,654 < 39,572 < 40,865 < 1,09,754$$

Descending order:

$$1,09,754 > 40,865 > 39,572 > 29,654$$

$$(c) \ 1297456, 352094, 102943, 492301$$

Sol: Ascending order:

$$1,02,943 < 3,52,094 < 4,92,301 < 12,97,456$$

Descending order:

$$12,97,456 > 4,92,301 > 3,52,094 > 1,02,943$$

Q.No.4: $\rightarrow$ Arrange the following in ascending and descending order.

$$(a) \ 30,572; 80,569; 26,491; 3,96,320$$

Sol: Ascending order:

$$26,491 < 30,572 < 80,569 < 3,96,320$$

Descending order:

$$3,96,320 > 80,569 > 30,572 > 26,491$$

$$(c) \ 25,60,537; 65,60,130; 25,60,357; 38,56,059$$

Sol: Ascending order:

$$25,60,357 < 25,60,537 < 38,56,059 < 65,60,130$$

Descending order:

$$65,60,130 > 38,56,059 > 25,60,537 > 25,60,357$$

Q.No.5: $\rightarrow$ Form the greatest and smallest numbers by using the given digits only once.

(a) 2, 8, 6, 0, 9 and 5.

Sol: Greatest number.

9,86,520

Smallest number.

2,05,689

(c) 7, 1, 6, 5, 8 and 0

Sol: Greatest number

8,76,510

Smallest number

1,05,678

(e) 2, 0, 1, 6, 8, 9 and 5

Sol: Greatest number

98,65,210

Smallest number

10,25,689

Q.No.6: $\rightarrow$ Write the greatest and smallest 8-digit numbers using the digits 8, 6, 7, 5, 2 and 3. (Digits can be repeated).

Sol: Greatest 8-digit number.

8,88,76,532

Smallest 8-digit number.

2,22,35,678.

Exercise: $\rightarrow$ 1.7

Q.No.1: $\rightarrow$ Round the following numbers to the nearest 10.

(a) 5,486

Sol: 5,486 — 5,490

(b) 17,092

Sol: 17,092 — 17,090

(c) 63,547

Sol: 63,547 — 63,550

(d) 70,965

Sol: 70,965 — 70,970

(e) 70,293

Sol: 70,293 — 70,290

Q.No.2: → Round the following numbers to the nearest 100 and 1000.

(a) 64,560

Sol: Nearest 100

64,560 — 64,600

Nearest 1000

64,560 — 65,000

(b) 4,80,561

Sol: Nearest 100

4,80,561 — 4,80,600

Nearest 1000

4,80,561 — 4,81,000

(c) 96,500

Sol: Nearest 100

96,500 — 96,500

Nearest 1000

96,500 — 97,000

(d) 7,86,500

Sol: Nearest 100

7,86,500 — 7,86,500

Nearest 1000

7,86,500 — 7,87,000

(e) 23,50,500

Sol: - Nearest 100

23,50,500 — 23,50,500
 Nearest 1000
 23,50,500 — 23,51,000

Q.No.3: → Population in city A is 6,07,688 and population in city B is 68,64,602. Round the population in both the cities to the nearest 1,000.

Sol: Population in city A = 6,07,688
 Nearest 1000 = 6,08,000
 Population in city B = 68,64,602
 Nearest 1000 = 68,65,000.

Q.No.4: → Which of the following can be rounded off? Write 'yes' or 'no'.

(a) The bus leaves at 3:48 pm. Can it be rounded to 4:00 pm? Yes

(b) If 292 tickets are sold, can you round off the number to 300? Yes

(c) If the date for the exam is the 18th, can you round it off to the 20th? Yes

(d) If your school fee is ₹ 4800, can you say your fee is around ₹ 5000? Yes

(e) Can you say there are about 400 days in a year? No

Exercise : → 1.8

Q.No.1: → Write the following Roman numbers in Hindu-Arabic numbers.

(a) LXXX = (50 + 10 + 10 + 10) = 80

(b) CCLX = (100 + 100 + 50 + 10) = 260

(c) DCXII = (500 + 100 + 10 + 2) = 612

(d) MCLIV = (1000 + 100 + 50 + 4) = 1154

(e) CXLIX = (100 + (50 - 10) + 9) = 149

$$(f) \text{ DCCX} = (500 + 100 + 100 + 10) = 710$$

$$(g) \text{ XCVII} = ((100 - 10) + 7) = 97$$

$$(h) \text{ DCCIX} = (500 + 100 + 100 + 9) = 709$$

Q.No.2: → Write each of the following Hindu-Arabic numbers in the Roman numerals.

$$(a) 250 = \text{CCL}$$

$$(b) 1550 = \text{MDL}$$

$$(c) 526 = \text{DXXVI}$$

$$(d) 1720 = \text{MDCCXX}$$

$$(e) 2600 = \text{MMDC}$$

$$(f) 585 = \text{DLXXXV}$$

$$(g) 1140 = \text{MCXL}$$

$$(h) 2009 = \text{MMIX}$$

Q.No.3: → Fill in the blanks using the Roman numerals.

$$(a) \text{ I was born in the year } \underline{\hspace{2cm}}$$

$$(b) \text{ The year in progress is } \underline{\text{MMXXI}}.$$

$$(c) \text{ The next commonwealth Games will be held in the year } \underline{\text{MMXXII}}.$$

$$(d) \text{ India got independence in the year } \underline{\hspace{2cm}}.$$

$$\underline{\text{MDCCCLVII}}$$

$$(e) \text{ Mahatma Gandhi died in the year } \underline{\hspace{2cm}}.$$

$$\underline{\text{MCMXLVIII}}$$

Q.No.4: → Arrange XXVI, XIV, XXXIV, XXXVI, XXIX, XII in ascending order.

$$\text{Sol: } \text{XII} < \text{XIV} < \text{XXVI} < \text{XXIX} < \text{XXXIV} < \text{XXXVI}.$$

Q.No.5: → A King lived for 120 years. He had 35 members in his family and 76

States under his Kingdom. Write all Hindu - Arabic numbers in the Roman numerals.

Sol: $120 \text{ years} = \text{CXX}$
 $35 \text{ members} = \text{XXXV}$
 $76 \text{ states} = \text{LXXVI}$

MATH 'B' [Ex = 7.1 - 7.6]

Exercise :→ 7.1

Definitions :

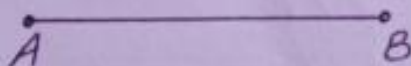
1: Points:→ A point is a fixed location. It cannot be moved. A point may be represented by drawing a dot on the paper.

2: Lines:→ A line is a collection of points extended endlessly in both the directions along a straight path.

A line has no beginning and no end. It has no end points.



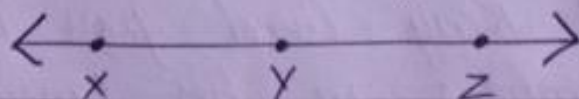
3: Line Segment:→ A line segment is part of a line. It has two end points.



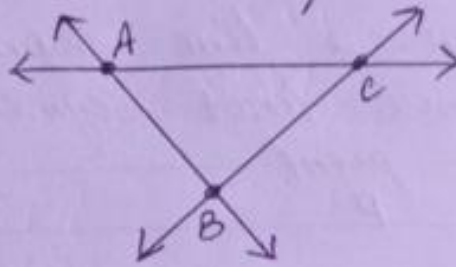
4: Ray:→ A ray is part of a line. It has one end point and goes endlessly in the other direction.



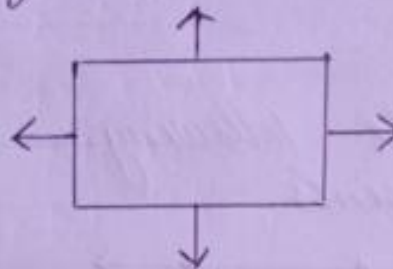
5: Collinear points:→ If three or more points lie in a straight line, the points are said to be collinear points.



6: Non-Collinear points $\rightarrow$ Three points not lying on the same straight line are called the non-collinear points.



7: Plane $\rightarrow$ A plane is a flat surface that goes on endlessly or extends indefinitely in all directions.



Exercise $\rightarrow$ 7.1

Q.No. 1 $\rightarrow$ Draw the following.

(a) Point B

Sol: $\bullet B$

(b) $\overline{AB}$

Sol: $A \text{ --- } B$

(c) $\overrightarrow{PQ}$

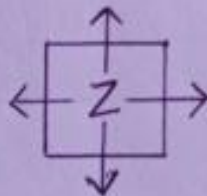
Sol: $P \text{ --- } \rightarrow Q$

(d) $\overleftrightarrow{XY}$

Sol: $\leftarrow X \text{ --- } Y \rightarrow$

(e) Plane Z

Sol:



Q.No. 2 $\rightarrow$ Name the following.

(a) $\bullet P$

Sol: Point P

(b) $M \text{ --- } N$

Sol: Line Segment MN

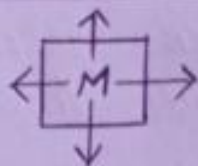
(c) $L \text{ --- } \rightarrow M$

Sol: Ray LM

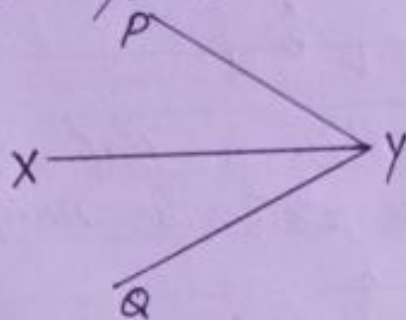
(d) $\leftarrow A \text{ --- } B \rightarrow$

Sol: Line AB

(e)

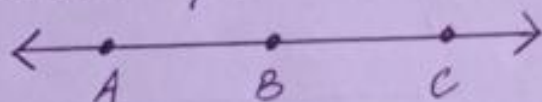
Sol: Plane M

Q.No.3: → Draw a line segment $\overline{XY}$. Then draw two more line segments that have Y as an end point.

Sol:

Q.No.4: → Draw the following.

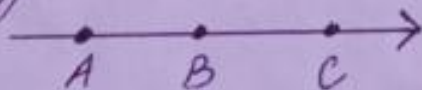
(a) 3 collinear points.

Sol:

(b) 3 non-collinear points.

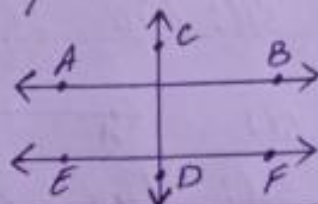
Sol:

Q.No.5: → Name the different rays contained in the line given here.



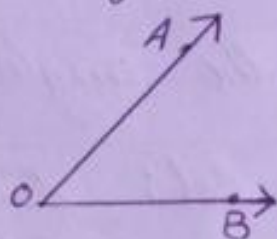
Sol: Ray AC and Ray BC

Q.No.6: → Draw lines $\overleftrightarrow{AB}$, $\overleftrightarrow{CD}$, and $\overleftrightarrow{EF}$ so that line CD is perpendicular to both the remaining lines.

Sol:

Definitions:

1) Angle $\rightarrow$ Two rays with a common end point form an angle.



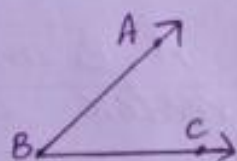
2) Interior angle $\rightarrow$ The points lying inside the angle form the interior of the angles.

3) Exterior angle $\rightarrow$ The points lying outside the angle form the exterior of the angle.

Exercise $\rightarrow$ 7.2

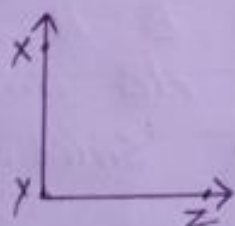
Q.No.2 $\rightarrow$ Name the angles given below.

(a)



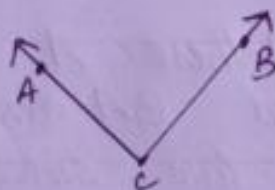
Sol: $\angle ABC$

(b)



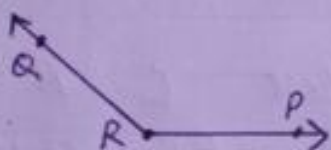
Sol: $\angle XYZ$

(c)



Sol: $\angle ACB$

(d)



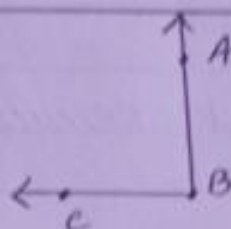
Sol: $\angle QRP$

(e)



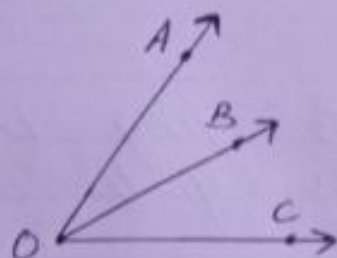
Sol: $\angle PQR$

(4)

Sol: $\angle ABC$

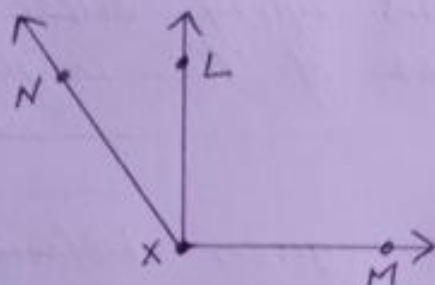
Q.No.2: $\rightarrow$ Name all the angles in the given figures.

(a)



Sol: $\angle AOB$
 $\angle BOC$ and
 $\angle AOC$

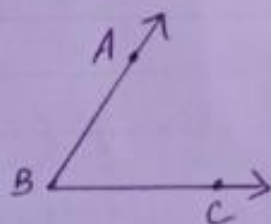
(b)



Sol: $\angle NXL$
 $\angle LXM$ and
 $\angle NXM$

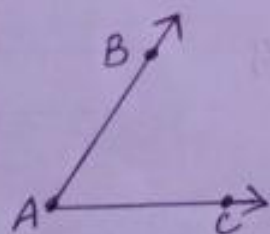
Q.No.3: $\rightarrow$ Name the angles using A, B and C in three ways and identify its vertex and sides in each case.

Sol: (i)



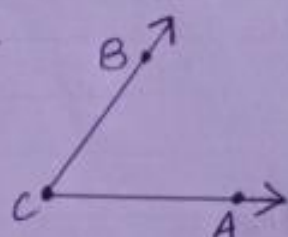
$\angle ABC$, Where B is the vertex and AB and BC are the two sides.

(ii)



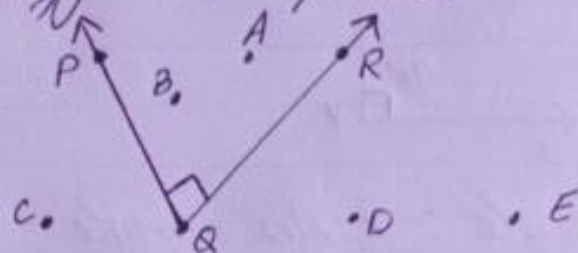
$\angle BAC$, Where A is the vertex and BA and AC are the two sides.

(iii)



$\angle BCA$, Where C is the vertex and BC and CA are the two sides.

Q.No. 4: $\rightarrow$ Identify the points.



(a) outside the angle PQR

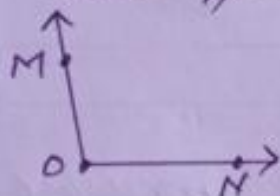
Sol: Exterior points $\rightarrow$ C, D and E

(b) Inside the angle PQR

Sol: Interior points $\rightarrow$ B and A.

Q.No. 5: $\rightarrow$ Write the name of the angle, Vertex and sides for each of the following.

(a)

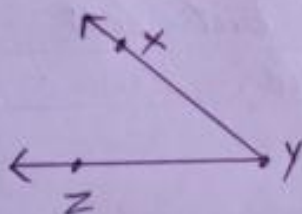


Sol: Angle: $\angle MON$.

Vertex: O

Sides: OM and ON

(b)

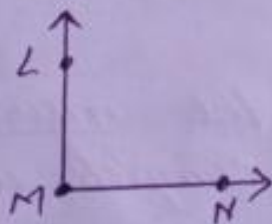


Sol: Angle: $\angle XYZ$

Vertex: Y

Sides: XY and ZY

(c)



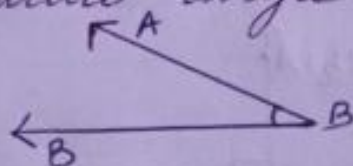
Sol: Angle: $\angle LMN$

Vertex: M

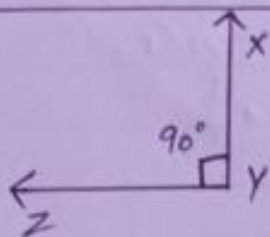
Sides: LM and NM.

Definitions:

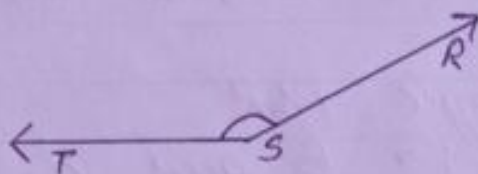
1: Acute angle: $\rightarrow$ An angle the measure of which is more than 0° but less than 90° is called an acute angle.



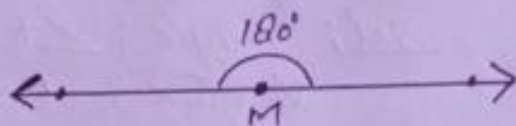
2: Right angle: $\rightarrow$ An angle the measure of which is 90° is called a right angle.



3. Obtuse angle $\rightarrow$ An angle the measure of which is greater than 90° but less than 180° is called an obtuse angle.



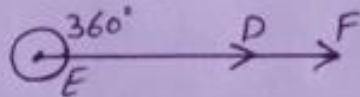
4. Straight angle $\rightarrow$ An angle the measure of which is 180° is called a straight angle.



5. Reflex angle $\rightarrow$ An angle the measure of which is greater than 180° but less than 360° is called a reflex angle.



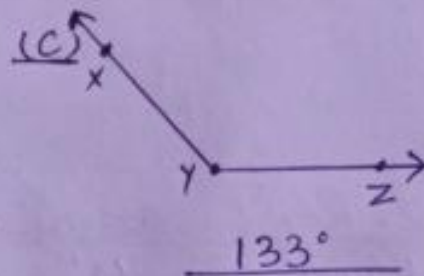
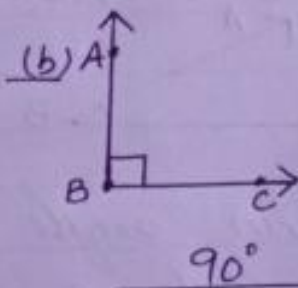
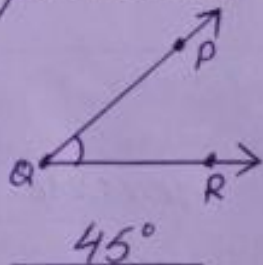
6. Complete angle $\rightarrow$ An angle the measure of which is 360° is called a complete angle.

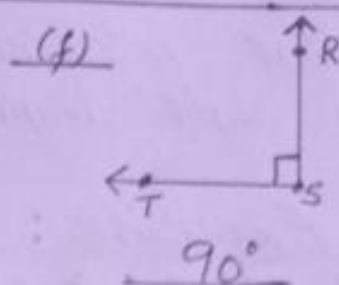
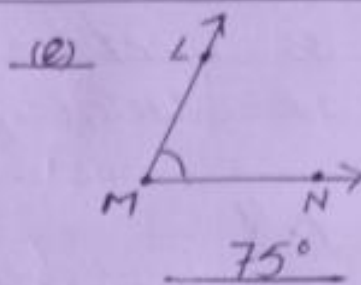
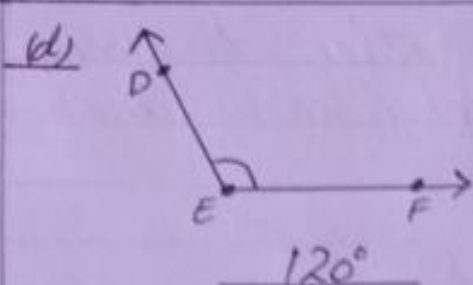


Exercise $\rightarrow$ 7.3

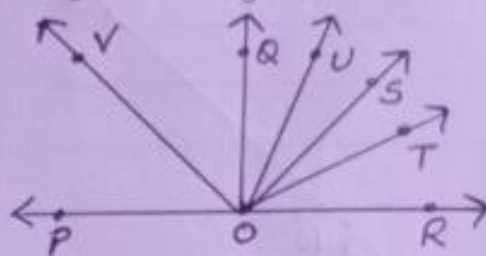
Q.No. 1 $\rightarrow$ Measure the following angles with a protractor.

(a)





Q.No.2 : $\rightarrow$ Measure and Write the following angles from the figure given alongside.



(a) $m \angle POQ = 90^\circ$

(b) $m \angle ROV = 134^\circ$

(c) $m \angle QOR = 90^\circ$

(d) $m \angle ROU = 65^\circ$

(e) $m \angle ROS = 45^\circ$

(f) $m \angle POT = 158^\circ$

(g) $m \angle POS = 145^\circ$

(h) $m \angle UOT = 65^\circ$

Q.No.3 : $\rightarrow$ Match the following

(a) Angle less than 90°

(b) Angle more than 90°

(c) Angle equal to 180°

(d) Angle equal to 90°

(e) Angle equal to 230°

(f) Angle equal to 360°

acute angle
obtuse angle
straight angle
right angle
reflex angle
complete angle

Definitions.

1. Parallel Lines : $\rightarrow$ Two or more coplanar lines that do not intersect are called parallel lines. Parallel lines are equidistant from each other. The symbol for parallel lines is $\parallel$

2. Intersecting Lines : $\rightarrow$ Two lines that cross each other are called intersecting lines.

3. Perpendicular Lines : $\rightarrow$ The line (Two lines).

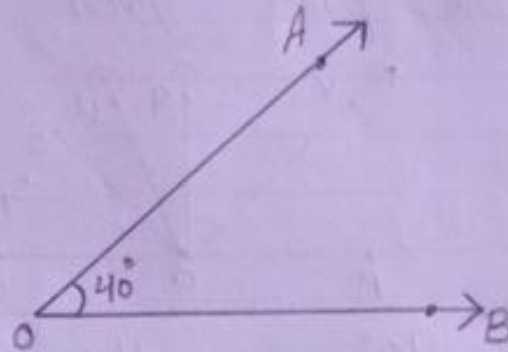
that intersect or meet each other to form a right angle are called perpendicular lines.

Exercise : → 7.4

Q. No. 1 : → Use a protractor to draw angles of 40° , 65° , 80° , 90° , 110° and 140° .

(a) 40°

Sol:



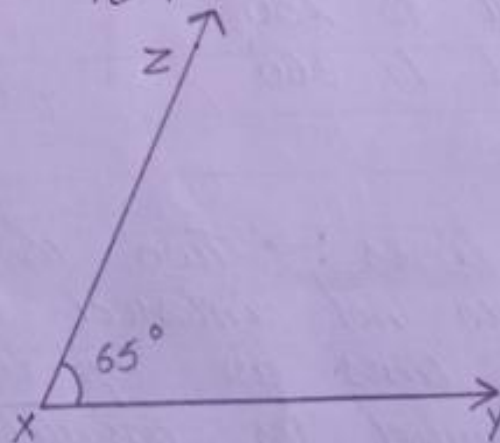
Step 1: Draw a ray $\vec{OB}$.

Step 2: Choose O as the vertex point, and place the protractor carefully with its centre point resting on point O.

Step 3: Adjust the protractor to coincide the base line with $\vec{OB}$.

Step 4: Measure carefully from 0° to reach 40° . Mark this point as A.

Step 5: Join A to O to get $\vec{OA}$.
 $m \angle AOB = 40^\circ$.



(b) 65°

Sol:

Step 1: Draw a ray $\vec{XY}$.

Step 2: Choose X as the vertex point, and place the protractor carefully with its centre point resting on point X.

Step 3: Adjust the protractor to coincide the

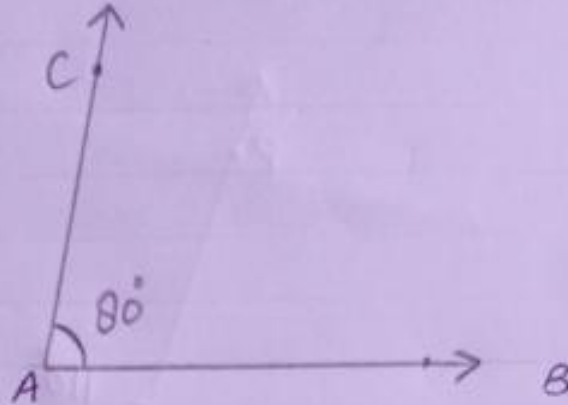
base line with $\overrightarrow{XY}$.

Step 4: Measure carefully from 0° to reach 65° .
Mark this point as Z.

Step 5: Join Z to X to get $\overrightarrow{ZX}$.
 $m \angle ZXY = 65^\circ$.

(c) 80°

Sol:



Step 1: Draw a ray $\overrightarrow{AB}$.

Step 2: Choose A as the vertex point, and place the protractor carefully with its centre point resting on point A.

Step 3: Adjust the protractor to coincide the base line with $\overrightarrow{AB}$.

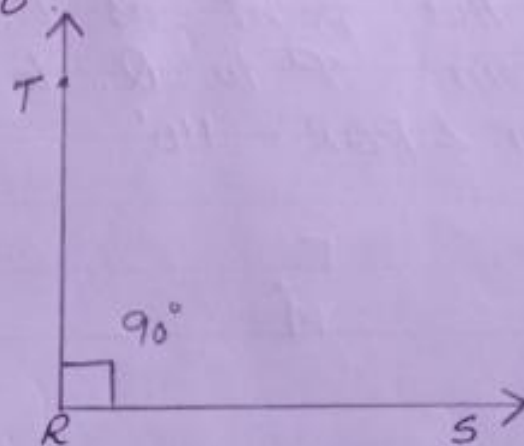
Step 4: Measure carefully from 0° to reach 80° .

Step 5: Join C to A to get $\overrightarrow{CA}$.

$m \angle CAB = 80^\circ$.

(d) 90°

Sol:



Step 1: Draw a ray $\overrightarrow{RS}$.

Step 2: Choose R as the vertex point, and place the protractor carefully with its centre point resting on point R.

Step 3: Adjust the protractor to coincide the base

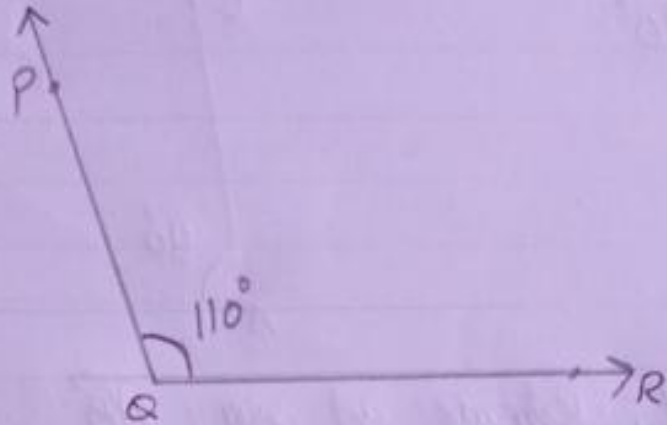
line with $\vec{RS}$.

Step 4: Measure carefully from 0° to reach 90° .
Mark this point as T.

Step 5: Join T to R to get $\vec{RT}$.
 $m \angle TRS = 90^\circ$

(e) 110°

Sol:



Step 1: Draw a ray $\vec{QR}$.

Step 2: Choose Q as the vertex point, and place the protractor carefully with its centre point resting on point Q.

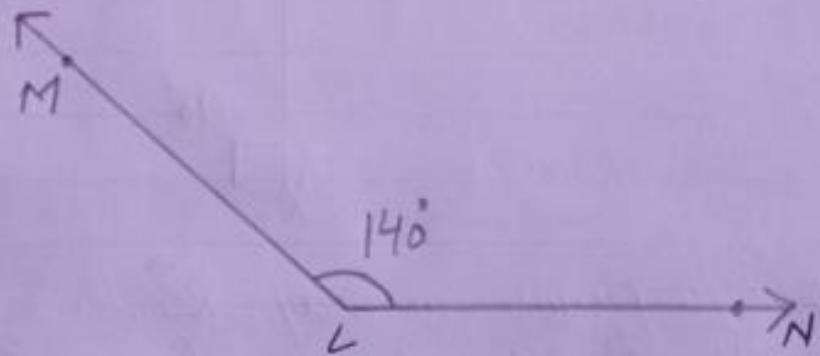
Step 3: Adjust the protractor to coincide the base line with $\vec{QR}$.

Step 4: Measure carefully from 0° to reach 110° .
Mark this point as P.

Step 5: Join P to Q. to get $\vec{PQ}$.
 $m \angle PQR = 110^\circ$

(f) 140°

Sol:



Step 1: Draw a ray $\vec{LN}$.

Step 2: Choose L as the vertex point, and place the protractor carefully with its centre

point resting on point L.

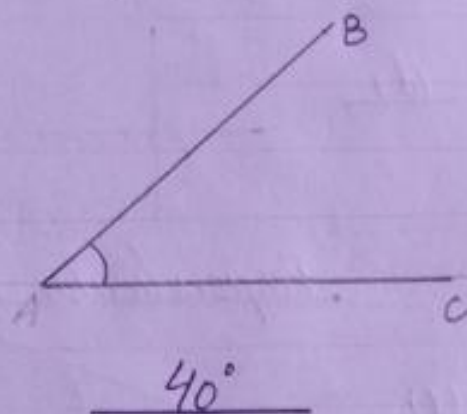
step 3: Adjust the protractor to coincide the base line with LN.

step 4: Measure carefully from 0° to reach 140° . Mark this point M.

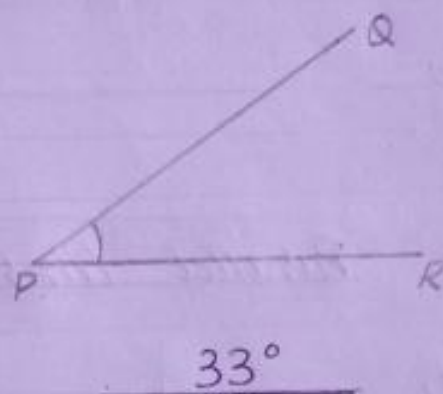
step 5: Join M to L to get $\overrightarrow{ML}$.
 $m \angle MLN = 140^\circ$.

Q.No.2: $\rightarrow$ Measure these angles with the help of a protractor.

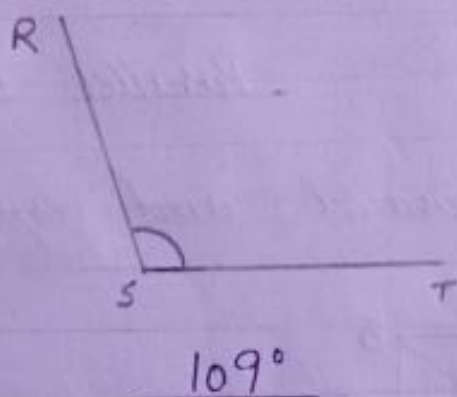
(a)



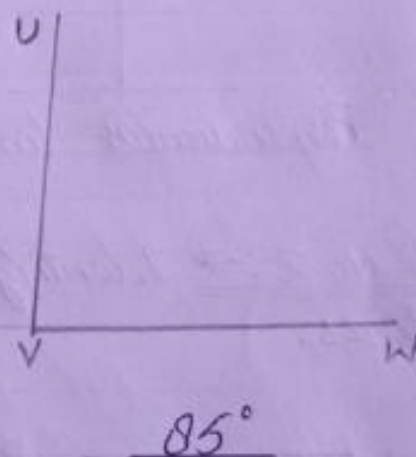
(b)



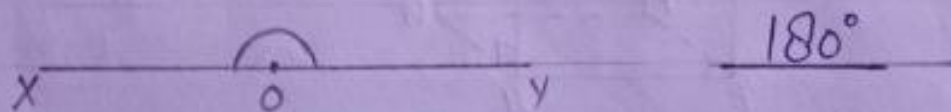
(c)



(d)

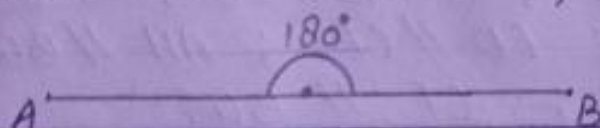


(e)



Q.No.3: $\rightarrow$ Construct an angle of 180° . What do you discover about its shape?

Sol:



180° is a straight line.

Exercise :→ 7.5

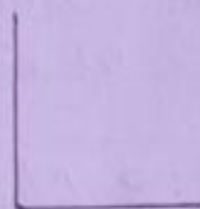
Q.No.1:→ Classify the lines given below as parallel, intersecting, or perpendicular.

(a)



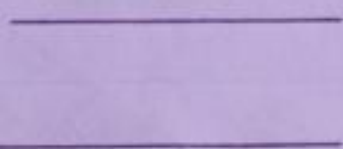
Intersecting lines

(b)



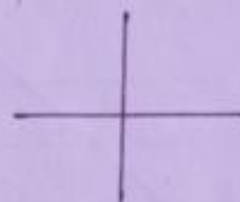
Perpendicular lines

(c)



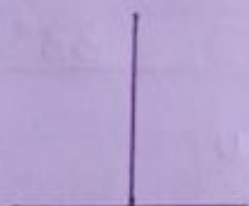
Parallel lines

(d)



Perpendicular lines

(e)



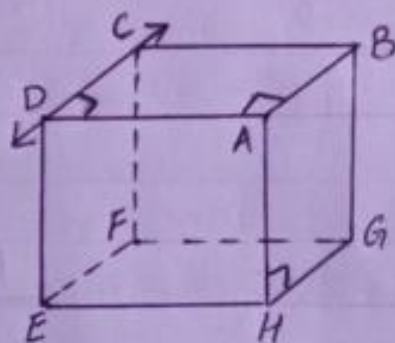
Perpendicular lines

(f)



Parallel lines

Q.No.2:→ Identify the parallel and perpendicular lines.



(a) Name the pair of parallel lines.

Sol: (i) $AD \parallel BC$; (ii) $AB \parallel CD$; (iii) $EH \parallel GF$;
 $EF \parallel HG$; $ED \parallel CF$; $AH \parallel BG$;
 $BC \parallel FG$; $CF \parallel BG$.

(b) Name the pair of perpendicular lines.

Sol: (i) $DE \perp EH$; $AH \perp HE$; $DA \perp AH$;
 $AD \perp DE$; $BA \perp AD$; $CD \perp DA$; $BC \perp CD$;
 $CB \perp BA$; $DE \perp EF$; $CF \perp FE$; $DC \perp CF$;
 $CD \perp DE$; $AH \perp HG$; $BG \perp GH$; $AB \perp BG$;
 $BA \perp HA$.

Exercise $\rightarrow$ 7.6

Definitions :

1. Triangle :- A triangle is a polygon made up of the least sides. A triangle has 3 sides.

Classification of Triangles.

(i) Equilateral triangle $\rightarrow$ A triangle with all sides of equal lengths is called an equilateral triangle.

(ii) Isosceles triangle $\rightarrow$ A triangle with two sides equal is called an isosceles triangle.

(iii) Scalene triangle $\rightarrow$ A triangle with all three sides of different lengths is called a scalene triangle.

(iv) Acute triangle $\rightarrow$ A triangle where all three angles are acute (less than 90°) is called an acute triangle.

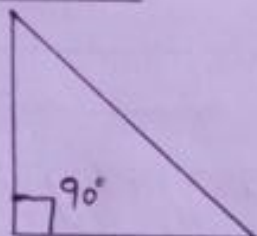
(v) Right triangle $\rightarrow$ A triangle in which one of the angles is a right angle (90°) is called a right triangle.

vi) Obtuse triangle $\rightarrow$ A triangle in which one of the angles is an obtuse angle (more than 90° and less than 180°) is called an obtuse triangle.

Exercise $\rightarrow$ 7.6

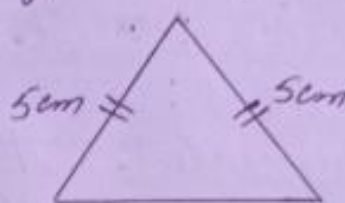
Q.No. 1 $\rightarrow$ Name the following triangles.

(a)



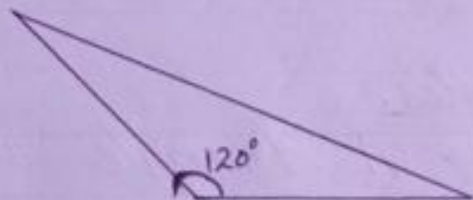
Right triangle

(b)



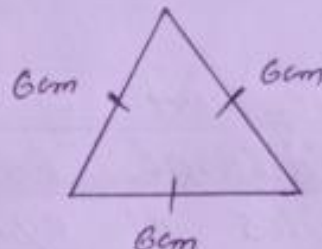
Isosceles triangle

(c)



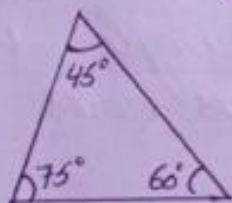
obtuse triangle

(d)



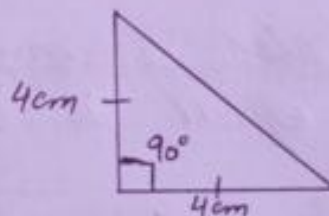
Equilateral triangle

(e)



Acute triangle

(f)



Isosceles-right triangle

Q.No. 2 $\rightarrow$ Fill in the blanks.

(a) When all sides are equal, it is an Equilateral triangle.

(b) An Isosceles triangle has two equal sides.

(c) A Scalene triangle has all sides of different lengths.

(d) An equilateral triangle is also Acute-angle triangle.

(e) The sum of the angles of a triangle is equal to 180° .

Q.No.3: → State true or false.

(a) All the sides of an equilateral triangle are equal. True.

(b) An isosceles triangle has no equal sides. False.

(c) An obtuse angle has one right angle. False.

(d) A right triangle can have an obtuse angle. False.

(e) A scalene triangle has three concurrent sides. False.

Q.No.4: → Find the following.

(a) The sum of all the angles of an equilateral triangle. 180°

(b) The sum of all the angles of an isosceles triangle. 180°

(c) The sum of all the angles of a scalene triangle. 180°

(d) If possible, draw a triangle with sides 6cm, 3cm and 2cm.

Sol: The given measurements are 2cm, 3cm and 6cm. Here the sum of the two sides is less than third side.

Hence, a triangle cannot be constructed.

(e) Are there any triangular figures in your geometry box? What kind of triangles are they?

Sol: Yes, there are triangular figures in our geometry box. They are called Set squares. They are right-triangle.