

Knowing Our Numbers

1. Knowing our Numbers.

Solution-01:-

Smallest natural number is 1;

We can not write largest natural number.

Solution-02:-

(i) 1 Lakh = ten ten thousand.

(ii) 1 million = ten hundred thousand

(iii) 1 crore = ten ten Lakh

(iv) 1 billion = ten hundred million

[∵ 1 billion = ten ten ten million
= ten ten crore
= hundred crore]

Solution-03:-

(1) Indian system.

5,06,723.

Five Lakh six thousand

Seven hundred twenty

three.

International system

506,723.

Five hundred six thousand

Seven hundred twenty three.

(ii) 18,00,18,018

Eighteen crore

Eighteen thousand

Eighteen

(ii) 180,018,018.

One hundred eighty million

eighteen thousand eighteen.

Solution-04:-

(i) The number can be written in the expanded form

$$750687 = 700000 + 50000 + 600 + 80 + 7$$

(ii) The number can be written in the expanded form

$$5032109 = 5000000 + 3000 + 2000 + 100 + 9$$

Solution-05.

(i) 7,03,420

(ii) 80,00,23,093

Periods	Crores		Lakhs		Thousands		Ones		
	Tc	C	TL	L	TTh	Th	H	T	O
7,03,420				7	0	3	4	2	0
80,00,23,093	8	0	0	0	2	3	0	9	3

Solution-06:

The numbers can be written in Numeral form

(i) 73,70,407

Seventy three Lakh Seventy thousand four hundred seven

(ii) 9,05,00,041.

Nine crore five Lakh forty one

(iii) 58,423,202. (International System)

Fifty eight million four hundred twenty three thousand two hundred two.

Solution-07:-

The given number (in Indian System) can be written as 7,56,032.

As the digit 6 occupies Thousand's place, so its place value = 6×1000
 $= 6,000.$

face value is - '6'

Solution - 08:-

The given number (in Indian System) can be written as 2,29,301.

As the digit '9' occupies Thousand's place, so its place value = 9×1000
 $= 9,000$

face value = 9.

difference of place value and face value
 $= 9000 - 9$
 $= 8,991.$

Solution-09:-

The given number (in international System) can be written as 37,014,472.

As the digit '7' occupies Ten's place and million's place.

its place value million's = $7 \times 10,00,000$
 $= 7,000,000$

ten's = 7×10
 $= 70.$

$$\begin{aligned} & \text{difference of the place value of two 1's} \\ & = 1,000,000 - 70 \\ & = 6,999,930. \end{aligned}$$

Six million nine hundred ninety nine thousand
nine hundred thirty.

Solution-10:-

The given number (in Indian system) can be written
as 5, 437.

$$\begin{aligned} \text{The place value of 4 is} & = 4 \times 100 \\ & = 400 \end{aligned}$$

$$\text{face value} = '4'$$

$$\begin{aligned} \text{Product of face value and place value} & = 4 \times 400 \\ & = 1600. \end{aligned}$$

Solution-11:-

Given number is 895

by reversing the number 895 \rightarrow 598.

\therefore difference b/w the number 895 and that
obtained on reversing it's digits

$$= 895 - 598$$

$$= 297.$$

Exercise-1.2

Solution-01:-

(i) $173 \dots 189$

$$\begin{array}{ccc} 1 & \textcircled{7} & 3 \\ \downarrow & \downarrow & \\ 1 & \textcircled{8} & 9 \end{array}$$

$$173 < 189$$

(ii) $1058 \dots 1074$

$$\begin{array}{ccc} 10 & \textcircled{5} & 8 \\ \downarrow \downarrow & \downarrow & \\ 10 & \textcircled{7} & 4 \end{array}$$

$$1058 < 1074$$

(iii) $8\textcircled{3}15$

$$\begin{array}{ccc} \downarrow \uparrow & & \\ 8 & \textcircled{0} & 3 & 7 \end{array}$$

$$8315 > 8037$$

Solution-02:-

(i) $553, 503$.

$$\begin{array}{ccc} \textcircled{5} & \textcircled{5} & 3 \\ \uparrow \downarrow & \downarrow & \\ \textcircled{5} & \textcircled{0} & 3 \end{array}$$

$$503 < 553$$

503 is smaller than 553

(ii) $41138, 1139$.

number of digits in $41138 = 5$

number of digits in $1139 = 4$

$\therefore 1139$ is smaller than 41138 .

(ii) 24531, 25431

$\begin{array}{cccc} \bar{2} & \textcircled{5} & 4 & 3 & 1 \\ \updownarrow & \uparrow & & & \\ 2 & \textcircled{4} & 5 & 3 & 1 \end{array}$

24531 is smaller than 25431.

Solution-03:-

(i) 71834, 75284, 571, 2333, 594

Number of ~~2~~ digits in 71834 = 5

" " 75284 = 5

" " 571 = 3

" " 2333 = 4

" " 594 = 3

$\begin{array}{cccc} 7 & \textcircled{1} & 8 & 3 & 4 \\ \updownarrow & \downarrow & & & \\ 7 & \textcircled{5} & 2 & 8 & 4 \end{array}$

75,284 is largest number.

$\begin{array}{ccc} 5 & \textcircled{1} & 1 \\ \updownarrow & \downarrow & \\ 5 & \textcircled{7} & 4 \end{array}$

571 is smallest number.

Solution-037

(ii) 9853, 7691, 9999, 12202

$\begin{array}{cccc} 7 & \textcircled{8} & 5 & 3 \\ \updownarrow & \downarrow & & \\ \textcircled{9} & \textcircled{9} & 9 & 9 \\ \uparrow & & & \\ 7 & 6 & 9 & 1 \end{array}$

7691 is the smallest number.

12,002 is the Largest number in the given numbers.

Solution-04:-

The given numbers are

304, 340, 34, 43, 430.

The number of digits in 304, 340 and 430
is = 3.

The number of digits in 34, 43 is = 2.

To compare the numbers 34 and 43;
write these numbers as shown,

$$\begin{array}{r} 34 \\ \downarrow \\ 43 \end{array}$$

To compare the numbers 304, 340 and
430

$$\begin{array}{r} 304 \\ \downarrow \downarrow \\ 3 \quad 40 \\ \downarrow \\ 430 \end{array}$$

∴ The given numbers in ascending order are
34, 43, 304, 340, 430.

Solution-05:-

The given numbers are.

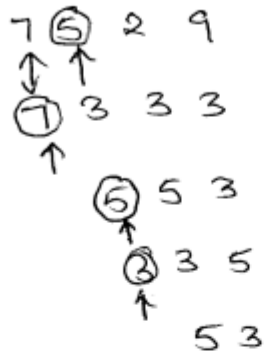
53, 7333, 553, 1529, 535

Two digit numbers are $\rightarrow 53$.

Three digit numbers are $\rightarrow 553, 335$

four digit numbers are $\rightarrow 7333, 7529$

To compare the numbers are as shown.



given numbers in descending order

7529, 7333, 553, 335 and 53.

Solution-06:-

2 digit numbers that can be formed by 2, 3 and

4 are 23

24

32

24

42

43

198

sum of the numbers - 198.

Solution-07:-

three digit numbers that can be formed by 3, 1 and 5
are 315; 351; 135; 153; 513; 531.

Solution-08:-

3 digit numbers that can be formed by

7, 0 and 6 are

$$\begin{array}{r} 706 \\ 760 \\ 607 \\ 670 \\ \hline 11 \\ \hline 2743 \end{array}$$

∴ Sum of the numbers is 2743

Solution-09:-

2 digit numbers that can be formed by 4, 0, 9

are

$$\begin{array}{r} 40 \\ 49 \\ 94 \\ 90 \\ \hline 273 \end{array}$$

∴ Sum of the numbers 273.

Solution-10:-

2 digit numbers that can be formed by 3, 7 & 9

are

$$\begin{array}{r} 37 \\ 39 \\ 79 \\ 97 \\ 79 \\ 97 \\ \hline 73; 33; 77; 99 \end{array}$$

Solution - 11:-

Given digits are 3, 1, 5.

Possible 1 digit numbers are 3, 1, 5.

2 digit numbers are 31, 35, 13, 15, 51, 53

3 digit numbers are

315, 351, 135, 153, 513, 531.

Possible numbers are.

3, 1, 5, 31, 35, 13, 15, 51, 53, 315, 351, 135, 153, 513, 531.

Solution - 12:-

The greatest 6 digit number is 999999.

The greatest 5 digit number is 99999.

∴ The total number of 6 digit numbers = $999999 - 99999$
= 900000.

Solution - 13:-

Given digits are 7, 5, 0 and 4.

Greatest 4 digit number forms by the given numbers is 7540.

Smallest 4 digit number forms by the given digits is 4057.

Solution-14:-

The given number is 5701024. For the greatest number with 7 digits, the digit in the ten lakhs place has to be greatest, which is 7; followed by next greatest digit's in lakhs place and so on.

∴ The greatest 7 digit number that can be formed by Rearranging the numbers in 5701024 is

7542100.

Ten lakhs	Lakhs	Ten Thousands	Thou's	Hundred's	Tens	ones
7	5	4	2	1	0	0

For the smallest number with 7 digits, we have to follow similarly, 0 can be ^{not} placed in the Ten lakhs, lakhs place as it will become 6 digit number when we place smallest number '0' in the Ten Lakhs position

The digit in the ten lakhs place has to be smallest, which is 1; followed by next 0; followed by 0; followed by next smallest digit 2; and soon.

1002457.

Ten L	L	TT	T	H	Te	one
1	0	0	2	4	5	7

Solution-15:-

∴ Its place value of digit 3 in the number 730265 is same.

Largest number of 6 digits that can be formed by rearranging 730265 and digit 3 placing same.

For the Largest number, the Lakhs place digit should be greater that is 7; followed by 3; followed by greater number 6; and so on.

L	TT	T	H	Ten	ones
7	3	6	5	2	0.

Required Largest number is 736520.

Smallest 6 digit number.

0 can not be placed in Lakhs and Ten Thousands position. 0 can not be placed in Lakhs position as it becomes 5 digit number; given that TT place should be digit 3;

For the smallest 6 digit number Lakhs place should be smallest number 2; followed by 3; followed by 0; followed by next smallest number 5; and so on.

L	TT	T	H	Ten	ones
2	3	0	5	6	7

Required smallest number is 230567.

Solution-16:-

(i) 5, 2, 3, 9.

Smallest 4 digit number by using any one digit twice from digits is

2 2 3 5. [Smallest number to be placed twice]

Largest 4 digit number by using any one digit twice from digits is

9 9 5 3

[Largest number can be formed by using Largest digits placing twice; followed by next Largest numbers; followed by next largest number.]

(ii) 6, 0, 1, 4.

Smallest 4 digit number

1 0 0 4.

Largest 4 digit number

6 4 1

(iii) 4, 6, 1, 5, 8

Smallest 5 digit number

1 1 4 5 8

Largest 5 digit number

8 8 6 5 4

Solution-17:-

(i) greatest number of 6 digits is

999999

(ii) smallest number of 7 digits is

1000000

difference = Smallest 7 digit number -
Largest 6 digit number

$$= 1000000 - 999999$$

$$= 1.$$

Solution-18:-

The greatest four digits are 9, 8, 7 and 6.

The greatest 4-digit number having distinct numbers are 9876.

Solution-19:-

The smallest four digits are 0, 1, 2 and 3.

The smallest 4-digit number having four distinct numbers is 1023 [∵ '0' can not be placed

in Thousand place as it makes three digit number when we place]

[Numbers to arranged in ascending order]

Solution - 20:-

The greatest three different digits are 9, 8, 7.

The greatest 6 digit number having three different digits = 999987.

Solution - 21:-

The smallest four different digits are 0, 1, 2, 3.

The smallest ⁷ 6-digit number having four different digits = 100023.

Solution - 22:-

(i) Greatest number

9	8	6	7
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Smallest number

1	0	2	7
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(ii) Greatest number 9847

Smallest number 1042

(iii) Greatest number 8976

Smallest number 1902

(iv) Greatest number 2987

Smallest number 2013.

Exercise -1.3.

Solution -01:-

company manufactured in the Particular year 8570435
Next year 8756430.

Both the numbers are 8570435, 8756430 are 7-digit.

since $7 > 5$, therefore 8756430 $>$ 8570435

$$\begin{array}{r} [8 \textcircled{7} 5 6 4 3 0] \\ \uparrow \uparrow \\ 8 5 7 0 4 3 5 \end{array}$$

Hence, in the next year manufactured more bicycles than a particular year.

$$\begin{array}{r} 8756430 \\ 8570435 \\ \hline 185995 \end{array}$$

1,85,995 bicycles were manufactured more in next year than a particular year.

Solution -02:-

Let the required number be 'x' then

$$10259756 - x = 7763835$$

$$\therefore x = 10259756 - 7763835$$

$$\begin{array}{r} 10259756 \\ 7763835 \\ \hline 2495921 \end{array}$$

Required number is 24,95,921.

Solution-03:-

Sale receipt of a company in first year = ₹ 30587850
" " " " next year increased
by 6375490.

Total Sale receipt of a company during

these two years is = 30587850 + 30587850 +
6375490

$$\begin{array}{r} 30587850 \\ 30587850 \\ 6375490 \\ \hline 12221 \\ \hline 67551190 \end{array}$$

∴ Total sales receipt - ₹ 67,551,190.

Solution-04:-

Machine production per day = 23875.

Number of days in 2012 (Leap year) = 366.

∴ production in the year 2012 = 23,875 × 366.

$$\begin{array}{r} 23875 \\ \times 366 \\ \hline 143250 \\ 143250 \times \\ 711625 \times \\ \hline 2282000 \end{array}$$

$$\begin{array}{r} 23875 \\ \times 366 \\ \hline 143250 \\ 143250 \times \\ 711625 \times \\ \hline 8738250 \end{array}$$

∴ screws produced in the year 2012 is

87,38,250.

Solution-05:-

Total money with merchant = ₹ 78,592.

Bycle cost = ₹ 970.

Merchant placed order for 54 Bycles so

$$\text{cost} = 54 \times 970$$

$$\begin{array}{r} 970 \\ \times 54 \\ \hline 3880 \\ 48500 \\ \hline 52380 \end{array}$$

Bycles cost = 52,380.

Remaining money with merchant after purchase.

Solution-06:-

Amitabh height = 1m 82 cm

We know that \Rightarrow 1 meter = 100 cm

$$\begin{aligned} \therefore \text{Amitabh height} &= 1\text{m} 82\text{cm} \\ &= 182\text{cm}. \end{aligned}$$

His wife 35 cm shorter than him

$$\begin{aligned} \text{So Amitabh's wife height} &= 182\text{cm} - 35\text{cm} \\ &= 147\text{cm} \end{aligned}$$

\therefore Amitabh wife's height = 1m 47cm.

Solution - 07:-

Mass of one cylinder = 21 kg 270 g.

As we know that

$$1 \text{ Kg} = 1000 \text{ g.}$$

$$\begin{aligned} \text{Cylinder mass} &= 21 \text{ kg } 270 \text{ g} \\ &= 21 \times 1000 \text{ g} + 270 \text{ g} \\ &= 21000 + 270 \\ &= 21270 \text{ g.} \end{aligned}$$

\therefore Total 28 cylinders weight = $28 \times 21270 \text{ gms.}$

$$\begin{array}{r} 21270 \\ \times 28 \\ \hline 170160 \\ 425400 \\ \hline 595560 \end{array}$$

\therefore 28 cylinders weight = 5,95,560 g

By converting to kg

$$\frac{5,95,560}{1000}$$

$$\Rightarrow 595 \text{ kg } 560 \text{ g.}$$

Solution - 08:-

cloth required for one shirt = 2m 25cm.

$$\text{w.k.T } 1 \text{ m} = 100 \text{ cm}$$

$$\therefore 2 \text{ m } 25 \text{ cm} = 225 \text{ cm}$$

cloth required for 18 shirts = 18×225

$$= 4050$$

$$= 4050 \text{ cm}$$



cloth required for 18 shirts are = 4050 cm
= 40 m 50 cm

[∵ 1 m = 100 cm
40 m = 4000 cm]

Solution-09:-

sweets packet weight = 15 kg 600 g

we know that

$$1 \text{ kg} = 1000 \text{ g}$$

$$15 \text{ kg } 600 \text{ g} = 15000 \text{ g} + 600 \text{ g} \\ = 15600 \text{ g}$$

12 Sweet packets mass

$$\begin{array}{r} 15600 \\ \times 12 \\ \hline 31200 \\ 15600 \times \\ \hline 187200 \end{array}$$

$$\frac{187200 \text{ g}}{1000} = 187.2 \text{ kg}$$

∴ 12 sweet packets mass = 187 kg 200 g.

Solution-10:-

vessel capacity = 4 litres 500 millilitres

w.k.t 1 litre = 1000 millilitre.

$$\begin{aligned} \therefore 4 \text{ lit } 500 \text{ ml} &= 4000 \text{ ml} + 500 \text{ ml} \\ &= 4500 \text{ ml} \end{aligned}$$

$$\text{Number of glasses} = \frac{4500 \text{ ml}}{25 \text{ ml}}$$

Exercise - 1.4

Solution - 01:

(i) The given number is 77.

The digit at ones place is 7, which is greater than 5. So we increase the ^{tens} digit by 1 and replace the ones digit by 0.

The rounded off number to the nearest tens = 80.

(ii) 903.

The digit at ones place is 3, which is less than 5. So we replace the ones digit by 0 and keep all other digits of the number as they are.

The rounded off number to the nearest tens
= 900.

(iii) 1205.

The digit at ones place is 5. So we increase the tens digit by 1 and replace the ones digit by 0.

The rounded off number to the nearest
tens = 1210.

(iv) The given number is 999.

The digit at ones place is 9, which is greater than 5, so we increase tens digit and hundred's digit by 1 and replace the ones digit by 0.

∴ The rounded off number to the nearest
tens = 1000.

Solution-02:-

(i) The given number is 1246.

The digit at tens place is 4 which is less than 5. So, we replace digits at tens place and ones place by 0. Keep all other digits of the number as they are.

∴ The rounded off number to the nearest hundreds is 1200.

(ii) The given number is 32057.

The digit at tens place is 5. So we increase the hundreds place by 1 and replace each of the digit at tens place and ones place by 0.

The rounded off number to the nearest hundreds = 32100.

(iii) 53961.

The digit at tens place is 6. which is greater than 5 so we increase the hundreds place by 1 and replace each of the digit at tens place and ones place by 0.

The rounded off number to the nearest hundreds = 54000.

(iv) Given number is 555555.

The digit at tens place is 5, so, we increase the digit at hundreds place by 1 and replace each of the digit at tens place and ones place by '0'.

∴ The rounded off number to the nearest hundreds is 55600.

Solution-03:-

(i) The given number 5706.

The digit at hundreds place is 7, which is greater than 5.

∴ The estimation of the given number to its nearest thousands = 6000.

(ii) 378

The digit at hundreds place is 3, which is less than 5.

∴ The estimation of the given number to its nearest thousands = 0.

(iii) 47599.

The digit at hundreds place is 5 which is equal to 5.

∴ The estimation of the given number to its nearest thousands = 48000.

(iv) 1,09,736.

The digit at hundreds place, which is greater than 5.

∴ The estimation of the given number to its nearest number. thousands = 1,10,000.

Solution-04:-

(i) The given numbers are

439, 334 and 4317.

Estimating the ^{numbers} nearest tens,

440, 330, 4320.

∴ The ~~8~~ estimated sum
= 5090.

$$\begin{array}{r} 440 \\ 330 \\ \hline 4320 \\ \hline 5090 \end{array}$$

rough estimate nearest hundreds

$$= 400 + 300 + 4300$$

$$= 5000.$$

∴ 5000; 5090.

(ii) the given numbers are 8325, 491

estimating the numbers nearest tens

8330 and 490.

$$\text{estimated sum} = 8330 + 490$$

$$= \del{8820}. 7840$$

rough estimate nearest hundreds

$$\del{8300} + 500 = \del{8800}.$$

∴ 7840; 7800.

(iii) the given numbers are 1,08,734 and 47,599.

nearest tens

108730 & 47600.

$$\text{estimated difference} = \begin{array}{r} 108730 \\ 47600 \\ \hline 61130 \end{array}$$

rough estimate near hundreds

108700, 47600.

$$\therefore \text{estimated difference} = 108700 + 47600 \\ = 61,100.$$

(iv) the given numbers are

4,89,348 and 48,365.

estimating the given numbers nearest tens

4893⁵40, 48370.

$$\text{estimating difference} = \begin{array}{r} 4893⁵40 \\ - 48370 \\ \hline 4,40,980 \end{array}$$

estimating the given numbers nearest hundreds

489300, 48400.

$$\text{estimated difference} = \begin{array}{r} 489300 \\ - 48400 \\ \hline 4,40,900 \end{array}$$

$$\therefore 4,40,980 \approx 4,40,900.$$

Solution -05:

(i) 730 + 998

The estimation of the number 730 nearest to its greatest place; the ^{hundred} thousands place = 700.

The estimation of the number 998 nearest to its greatest place, that is hundreds place = 1000.

$$\therefore \text{sum} = 700 + 1000 \\ = 1700.$$

(ii) $5290 + 17986$.

estimating the number 5290 nearest to its greatest place i.e. the thousands place = 5000

Estimating the number 17986 nearest to its greatest place; i.e. the ten thousands place

$$= 20,000$$

$$\therefore \text{Sum} = 5000 + 20000$$

$$= 25000.$$

(iii) nearest estimate of 796 by greatest

$$\text{place number} = 800$$

nearest estimate of 314 by greatest place = 300

$$800 - 300 = 500.$$

(iv) nearest estimate of 28,292 by greatest place

$$= 30,000.$$

nearest estimate of 21,496 by greatest place

$$= 20,000.$$

$$\text{difference} = 30,000 - 20,000$$

$$= 10,000.$$

Solution - 06:-

(i) nearest to 578 by greatest place = 600

" 161 " = 200

$$\therefore 600 + 200 = 2,000$$

Solution-06

(ii) 9650×27 .

nearest estimate of 9650 by greatest place
 $= 10,000$

" of 27 by greatest place $= 30$

\therefore product

$$10,000 \times 30 = 3,00,000.$$

Solution-07:

(i) 5281×3491

nearest 100's place

$$= 5300 \times 3500$$

$$= 1,85,50,000$$

(ii) 1387×888

nearest 100's place

$$\begin{array}{l} 1387 \rightarrow 1400 \\ \uparrow - \\ +1 \end{array}$$

$$\begin{array}{l} 887 \rightarrow 900 \\ \uparrow - \\ +1 \end{array}$$

$$\Rightarrow 1400 \times 900 = 1,26,00,000$$
