

Access RD Sharma Solutions for Class 6 Chapter 1: Knowing Our Numbers

Exercise 1.1 page: 1.7

1. Write each of the following in numeral form:

- (i) **Eight thousand twelve.**
- (ii) **Seventy thousand fifty three.**
- (iii) **Five lakh seven thousand four hundred six.**
- (iv) **Six lakh two thousand nine.**
- (v) **Thirty lakh eleven thousand one.**
- (vi) **Eight crore four lakh twenty five.**
- (vii) **Three crore three lakh three thousand three hundred three.**
- (viii) **Seventeen crore sixty lakh thirty thousand fifty seven.**

Solution:

- (i) The numeral form of eight thousand twelve is 8,012.
- (ii) The numeral form of seventy thousand fifty three is 70,053.
- (iii) The numeral form of five lakh seven thousand four hundred six is 5, 07, 406.
- (iv) The numeral form of six lakh two thousand nine is 6, 02, 009.
- (v) The numeral form of thirty lakh eleven thousand one is 30, 11, 001.
- (vi) The numeral form of eight crore four lakh twenty five is 8, 04, 00, 025.
- (vii) The numeral form of three crore three lakh three thousand three hundred three is 3, 03, 03, 303.
- (viii) The numeral form of seventeen crore sixty lakh thirty thousand fifty seven is 17, 60, 30, 057.

2. Write the following numbers in words in the Indian system of numeration:

- (i) **42,007**
- (ii) **4,05,045**
- (iii) **35, 42, 012**
- (iv) **7, 06, 04, 014**
- (v) **25, 05, 05,500**
- (vi) **5, 50, 50, 050**
- (vii) **5, 03, 04, 012**

Solution:

- (i) 42,007 is written as forty two thousand seven in the Indian system of numeration.
- (ii) 4,05,045 is written as four lakh five thousand forty five in the Indian system of numeration.

(iii) 35, 42, 012 is written as thirty five lakh forty two thousand twelve in the Indian system of numeration.

(iv) 7, 06, 04, 014 is written as seven crore six lakh four thousand fourteen in the Indian system of numeration.

(v) 25, 05, 05,500 is written as twenty five crore five lakh five thousand five hundred in the Indian system of numeration.

(vi) 5, 50, 50, 050 is written as five crore fifty lakh fifty thousand fifty in the Indian system of numeration.

(vii) 5, 03, 04, 012 is written as five crore three lakh four thousand twelve in the Indian system of numeration.

3. Insert commas in the correct positions to separate periods and write the following numbers in words:

(i) 4375

(ii) 24798

(iii) 857367

(iv) 9050784

(v) 10105607

(vi) 10000007

(vii) 910107104

Solution:

(i) 4375 by inserting commas is written as 4, 375.

(ii) 24798 by inserting commas is written as 24, 798.

(iii) 857367 by inserting commas is written as 8,57,367.

(iv) 9050784 by inserting commas is written as 90,50,784.

(v) 10105607 by inserting commas is written as 1,01,05,607.

(vi) 10000007 by inserting commas is written as 1,00,00,007.

(vii) 91010714 by inserting commas is written as 91,01,07,104.

4. Write each of the following in expanded notation:

(i) 3057

(ii) 12345

(iii) 10205

(iv) 235060

Solution:

(i) $3057 = 3 \times 1000 + 0 \times 100 + 5 \times 10 + 7 \times 1$

(ii) $12345 = 1 \times 10000 + 2 \times 1000 + 3 \times 100 + 4 \times 10 + 5 \times 1$

(iii) $10205 = 1 \times 10000 + 0 \times 1000 + 2 \times 100 + 0 \times 10 + 5 \times 1$

(iv) $235060 = 2 \times 100000 + 3 \times 10000 + 5 \times 1000 + 0 \times 100 + 6 \times 10 + 0 \times 1$

5. Write the corresponding numeral for each of the following:

(i) $7 \times 1000 + 2 \times 1000 + 5 \times 100 + 9 \times 10 + 6 \times 1$

(ii) $4 \times 100000 + 5 \times 1000 + 1 \times 100 + 7 \times 1$

(iii) $8 \times 1000000 + 3 \times 1000 + 6 \times 1$

(iv) $5 \times 10000000 + 7 \times 1000000 + 8 \times 1000 + 9 \times 10 + 4$

Solution:

(i) $7 \times 1000 + 2 \times 1000 + 5 \times 100 + 9 \times 10 + 6 \times 1 = 72, 596.$

(ii) $4 \times 100000 + 5 \times 1000 + 1 \times 100 + 7 \times 1 = 4, 05, 107.$

(iii) $8 \times 1000000 + 3 \times 1000 + 6 \times 1 = 80, 03, 006.$

(iv) $5 \times 10000000 + 7 \times 1000000 + 8 \times 1000 + 9 \times 10 + 4 = 5, 70, 08, 094.$

6. Find the place value of the digit 4 in each of the following:

(i) **74983160**

(ii) **8745836**

Solution:

(i) The place value of digit 4 in 74983160 is $4 \times 10, 00, 000 = 40, 00, 000.$

(ii) The place value of digit 4 in 8745836 is $4 \times 10, 000 = 40, 000.$

7. Determine the product of the place values of two fives in 450758.

Solution:

The place value of first five is $5 \times 10 = 50$

The place value of second five is $5 \times 10, 000 = 50, 000$

So the required product = $50 \times 50, 000 = 25, 00, 000.$

Therefore, the product of the place values of two fives in 450758 is 25, 00, 000.

8. Determine the difference of the place values of two 7's in 257839705.

Solution:

The place value of first seven is $7 \times 100 = 700$

The place value of second seven is $7 \times 10, 00, 000 = 70, 00, 000$

So the required difference = $700 - 70, 00, 000 = 69, 99, 300$

Therefore, the difference of the place values of two 7's in 257839705 is 69, 99, 300.

9. Determine the difference between the place value and the face value of 5 in 78654321.

Solution:

The given number is 78654321

The place value of five = $5 \times 10, 000 = 50, 000$

The face value of five = 5

So the required difference = $50, 000 - 5 = 49, 995$

Therefore, the difference between the place value and the face value of 5 in 78654321 is 49,995.

10. Which digits have the same face value and place value in 92078634?

Solution:

We know that the face value depends on the value of the digit and the place value depends on its place of occurrence.

So the digits which have same place and face value in a number are the ones digit and zeros of the number.

The given number is 92078634 and 9, 20, 78, 634 we know that 4 which are the ones digit and 0 which is the lakhs digit have same face and place value.

11. How many different 3-digit numbers can be formed by using the digits 0, 2, 5 without repeating any digit in the number?

Solution:

The different 3-digit numbers which can be formed by using the digits 0, 2, 5 without repeating any digit in the number are 205, 250, 502 and 520.

Therefore, four 3 digit numbers can be formed by using the digits 0, 2, 5.

12. Write all possible 3-digit numbers using the digits 6, 0, 4 when

(i) repetition of digits is not allowed

(ii) repetition of digits is allowed.

Solution:

(i) The possible 3 digit numbers using the digits 6, 0, 4 when repetition of digits is not allowed are 604, 640, 406 and 460.

(ii) The possible 3 digit numbers using the digits 6, 0, 4 when repetition of digits is allowed are 400, 406, 460, 466, 444, 404, 440, 446, 464, 600, 604, 640, 644, 646, 664, 606, 660 and 666.

13. Fill in the blank:

(i) 1 lakh = Ten thousand

(ii) 1 lakh = Thousand

(iii) 1 lakh = Hundred

(iv) 1 lakh = ten

(v) 1 crore = ten lakh

(vi) 1 crore = lakh

(vii) 1 crore = Ten thousand

(viii) 1 crore = thousand

(ix) 1 crore = Hundred

(x) 1 crore = Ten

Solution:

- (i) 1 lakh = 10 Ten thousand
 - (ii) 1 lakh = 100 Thousand
 - (iii) 1 lakh = 1000 Hundred
 - (iv) 1 lakh = 10000 Ten
 - (v) 1 crore = 10 ten lakh
 - (vi) 1 crore = 100 lakh
 - (vii) 1 crore = 1000 Ten thousand
 - (viii) 1 crore = 10000 thousand
 - (ix) 1 crore = 100000 Hundred
 - (x) 1 crore = 1000000 Ten
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Exercise 1.2 page: 1.13

1. Write each of the following numbers in digits by using international place value chart. Also, write them in expanded form

(i) Seven million three hundred three thousand two hundred six.

(ii) Fifty five million twenty nine thousand seven.

(iii) Six billion one hundred ten million three thousand seven.

Solution:

(i) Seven million three hundred three thousand two hundred six is written as 7, 303, 206 using international place value chart.

It can be written in expanded form as

$$7, 303, 206 = 7 \times 1000000 + 3 \times 100000 + 2 \times 100 + 0 \times 10 + 6 \times 1$$

(ii) Fifty five million twenty nine thousand seven is written as 55, 029, 007 using international place value chart.

It can be written in expanded form as

$$55, 029, 007 = 5 \times 10000000 + 5 \times 1000000 + 0 \times 100000 + 2 \times 10000 + 9 \times 1000 + 0 \times 100 + 0 \times 10 + 7 \times 1$$

(iii) Six billion one hundred ten million three thousand seven is written as 6, 110, 003, 007 using international place value chart.

It can be written in expanded form as

$$6, 110, 003, 007 = 6 \times 1000000000 + 1 \times 100000000 + 1 \times 10000000 + 0 \times 1000000 + 0 \times 100000 + 0 \times 10000 + 3 \times 1000 + 0 \times 100 + 0 \times 10 + 7 \times 1$$

2. Rewrite each of the following numerals with proper commas in the international system of numeration. Also, write the number name of each in the international system of numeration

(i) 513625

(ii) 4035672

(iii) 65954923

(iv) 70902005

Solution:

(i) 513625 is written as 513, 625 which is five hundred thirteen thousand six hundred twenty five in the international system of numeration.

(ii) 4035672 is written as 4, 035, 672 which is four million thirty five thousand six hundred seventy two in the international system of numeration.

(iii) 65954923 is written as 65, 954, 923 which is sixty five million nine hundred fifty four thousand nine hundred twenty three in the international system of numeration.

(iv) 70902005 is written as 70, 902, 005 which is seventy million nine hundred two thousand five in the international system of numeration.

3. Write each of the following numbers in the International system of numeration:

(i) Forty three lakh four thousand eighty four.

(ii) Six crore thirty four lakh four thousand forty four.

(iii) Seven lakh thirty five thousand eight hundred ninety nine only.

Solution:

(i) Forty three lakh four thousand eighty four can be written as 4, 304, 084 which is four million three hundred four thousand eighty four using International system of numeration.

(ii) Six crore thirty four lakh four thousand forty four can be written as 63, 404, 044 which is sixty three million four hundred four thousand forty four using International system of numeration.

(iii) Seven lakh thirty five thousand eight hundred ninety nine only can be written as 735, 899 which is seven hundred thirty five thousand eight hundred ninety nine only using International system of numeration.

4. Write the following numbers in the Indian system of numeration:

(i) Six million five hundred forty three thousand two hundred ten.

(ii) Seventy six million eighty five thousand nine hundred eighty seven.

(iii) Three hundred twenty five million four hundred seventy nine thousand eight hundred thirty eight.

Solution:

(i) Six million five hundred forty three thousand two hundred ten can be written as 65, 43, 210 which is sixty five lakh forty three thousand two hundred ten using the Indian system of numeration.

(ii) Seventy six million eighty five thousand nine hundred eighty seven can be written as 7, 60, 85, 987 which is seven crore sixty lakh eight five thousand nine hundred eighty seven using the Indian system of numeration.

(iii) Three hundred twenty five million four hundred seventy nine thousand eight hundred thirty eight can be written as 32, 54, 79, 838 which is thirty two crore fifty four lakh seventy nine thousand eight hundred thirty eight using the Indian system of numeration.

5. A certain nine digit number has only ones in ones period, only twos in the thousands period and only threes in millions period. Write this number in words in the Indian system.

Solution:

It is given that a nine digit number has only ones in ones period, only twos in the thousands period and only threes in millions period.

So we get the number as 333, 222, 111

We can write it as 33, 32, 22, 111 which is thirty three crore thirty two lakh twenty two thousand one hundred and eleven using the Indian system.

6. How many thousands make a million?

Solution:

We know that

One thousand = 1000 and One million = 1, 000, 000

Number of thousands which make a million = One million/ One thousand

By substituting the values

Number of thousands which make a million = 1, 000, 000/ 1000

So we get

Number of thousands which make a million = 1000

Therefore, 1000 thousands make a million.

7. How many millions make a billion?

Solution:

We know that

One million = 1, 000, 000 and One billion = 1, 000, 000, 000

Number of millions which make a billion = One billion/ One million

By substituting the values

Number of millions which make a billion = 1, 000, 000, 000/ 1, 000, 000

So we get

Number of millions which make a billion = 1000

Therefore, 1000 million make a billion.

8. (i) How many lakhs make a million?

(ii) How many lakhs make a billion?

Solution:

(i) We know that

One lakh = 1, 00, 000 and One million = 1, 000, 000

Number of lakhs which make a million = One million/ One lakh

By substituting the values

Number of lakhs which make a million = $1,000,000 / 1,00,000$

So we get

Number of lakhs which make a million = 10

Therefore, 10 lakhs make a million.

(ii) We know that

One lakh = 1,00,000 and One billion = 1,000,000,000

Number of lakhs which make a billion = One billion / One lakh

By substituting the values

Number of lakhs which make a billion = $1,000,000,000 / 1,00,000$

So we get

Number of lakhs which make a billion = 10,000

Therefore, 10,000 lakhs make a billion.

9. Write each of the following in numeral form:

(i) Eight million seven hundred eight thousand four.

(ii) Six hundred seven million twelve thousand eighty four.

(iii) Four billion twenty five million forty five thousand.

Solution:

(i) Eight million seven hundred eight thousand four can be written as

$$8 \times 1,000,000 + 7 \times 100,000 + 0 \times 10,000 + 8 \times 1000 + 0 \times 100 + 0 \times 10 + 4 \times 1 = 8,708,004$$

(ii) Six hundred seven million twelve thousand eighty four can be written as

$$6 \times 100,000,000 + 0 \times 10,000,000 + 7 \times 1,000,000 + 0 \times 100,000 + 1 \times 10,000 + 2 \times 1000 + 0 \times 100 + 8 \times 10 + 4 \times 1 = 607,012,084$$

(iii) Four billion twenty five million forty five thousand can be written as

$$4 \times 1,000,000,000 + 0 \times 100,000,000 + 2 \times 10,000,000 + 5 \times 1,000,000 + 0 \times 100,000 + 4 \times 10,000 + 5 \times 1000 + 0 \times 100 + 0 \times 10 + 0 \times 1 = 4,025,045,000$$

10. Write the number names of each of the following in international system of numeration:

(i) 435,002

(ii) 1,047,509

(iii) 59,064,523

(iv) 25,201,905

Solution:

(i) 435,002 can be written as four hundred thirty five thousand two in international system of numeration.

(ii) 1, 047, 509 can be written as one million forty seven thousand five hundred nine in international system of numeration.

(iii) 59, 064, 523 can be written as fifty nine million sixty four thousand five hundred twenty three in international system of numeration.

(iv) 25, 201, 905 can be written as twenty five million two hundred one thousand nine hundred five in international system of numeration.

Exercise 1.3 page: 1.16

1. How many four digit numbers are there in all?

Solution:

We know that the 10 digits are 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9

0 cannot be used in thousands place so only nine digits can be used.

10 digits can be used in hundreds, tens and units place

The number of four digit numbers = $9 \times 10 \times 10 \times 10 = 9000$

Therefore, 9000 four digit numbers are there in all.

2. Write the smallest and the largest six digit numbers. How many numbers are between these two.

Solution:

We know that the smallest digit is 0 which cannot be used in the highest place value.

So 1 which is the second smallest digit can be used in the highest place value

The required smallest six digit number is 100000

We know that the largest digit is 9 which can be used in any place

The required largest six digit number is 999999

So we get the difference = $999999 - 100000 = 899999$

Therefore, the smallest six digit number is 100000, the largest six digit number is 999999 and 899998 numbers are between these two numbers.

3. How many 8-digit numbers are there in all?

Solution:

We know that the 10 digits are 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9

0 cannot be used in the highest place value and 9 can be used in the highest place value

So the 10 digits can be used in the remaining places of 8 digit numbers

The total number of 8 digit numbers = $9 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 90000000$

Therefore, 90000000 eight digit numbers are there in all.

4. Write 10075302 in words and rearrange the digits to get the smallest and the largest numbers.

Solution:

The given number 10075302 can be written as one crore seventy five thousand three hundred and two.

To get smallest 8 digit number using 0, 1, 2, 3, 5 and 7

We use 1 which is the smallest digit in the highest place and largest digit 7 at the units place

Further we put 5 in the tens place, 3 in the hundreds place and 2 in thousands place

So the required smallest number is 10002357

To get largest 8 digit number using 0, 1, 2, 3, 5 and 7

We use 7 which is the largest digit in the highest place value, 5 in a place after highest place, 3 as the next one, 2 as the smallest digit and 1.

So the required largest number is 75321000.

5. What is the smallest 3-digit number with unique digits?

Solution:

102 is the smallest 3-digit number with unique digits.

6. What is the largest 5-digit number with unique digits?

Solution:

98765 is the largest 5-digit number with unique digits.

7. Write the smallest 3-digit number which does not change if the digits are in reverse order.

Solution:

101 is the smallest 3-digit number which does not change if the digits are in reverse order.

8. Find the difference between the number 279 and that obtained on reversing its digits.

Solution:

The reverse of 279 is 972

Difference between both the numbers = $972 - 279 = 693$

Therefore, the difference between the number 279 and that obtained on reversing its digits is 693.

9. Form the largest and smallest 4-digit numbers using each of digits 7, 1, 0, 5 only once.

Solution:

The largest 4 digit number = 7510

Smallest 4 digit number = 1057

Therefore, the largest and smallest 4-digit numbers using each of digits 7, 1, 0, 5 only once is 7510 and 1057.

Exercise 1.4 page: 1.18

1. Put the appropriate symbol (<, >) in each of the following boxes:

(i) $102394 \square 99887$

(ii) $2507324 \square 2517324$

(iii) $3572014 \square 10253104$

(iv) $47983505 \square 47894012$

Solution:

(i) $102394 > 99887$

(ii) $2507324 < 2517324$

(iii) $3572014 < 10253104$

(iv) $47983505 > 47894012$

2. Arrange the following numbers in ascending order:

(i) **102345694, 8354208, 6539542, 63547201, 12345678**

(ii) **1808090, 188088, 181888, 190909, 16060666.**

Solution:

(i) It can be written as

$6539542 < 8354208 < 12345678 < 63547201 < 102345694$

(ii) It can be written as

$181888 < 190909 < 188088 < 1808090 < 16060666.$

3. Arrange the following numbers in descending order:

(i) **56943300, 56943201, 5695440, 56944000, 5694437**

(ii) **1020216, 1020308, 1021430, 893245, 893425.**

Solution:

(i) It can be written as

$56944000 > 56943300 > 56943201 > 5695440 > 5694437$

(ii) It can be written as

$1021430 > 1020308 > 1020216 > 893425 > 893245.$

Exercise 1.5 page: 1.21

1. How many milligrams make one kilogram?

Solution:

One million or ten lakh milligrams make one kilogram.

2. A box of medicine tablets contains 2, 00, 000 tablets each weighing 20mg. What is the total weight of all the tablets in the box in grams? In kilograms?

Solution:

It is given that

Weight of each tablet = 20mg

So we get

Weight of 2, 00, 000 tablets = $2, 00, 000 \times 20$

We get the weight of 2, 00, 000 tablets = 40, 00, 000mg

We know that

Total weight of tablets in the box = 40, 00, 000mg

It can be written as

1g = 1000mg

So the weight of box having tablets = $40, 00, 000 / 1000 = 4000\text{g}$

We know that 1kg = 1000g

So the weight of box having tablets = $4000 / 1000 = 4\text{kg}$

Therefore, the total weight of all the tablets in the box is 4000g or 4kg.

3. Population of Sundarnagar was 2, 35, 471 in the year 1991. In the year 2001 it was found to have increased by 72, 958. What was the population of the city in 2001?

Solution:

It is given that

Population of sundarnagar in 1991 = 2, 35, 471

Increase in population in 2001 = 72, 958

We know that

Population of the city in 2001 = Population of sundarnagar in 1991 + Increase in population in 2001

By substituting the values

Population of the city in 2001 = $2, 35, 471 + 72, 958$

By addition

Population of the city in 2001 = 3, 08, 429

Therefore, the population of the city in 2001 is 3, 08, 429.

4. A book exhibition was held for four days in a school. The number of tickets sold at the counter on the first, second, third and final days were respectively 1094, 1812, 2050 and 2751. Find the total number of tickets sold on all the four days.

Solution:

It is given that

Number of tickets sold at the counter on the first = 1094

Number of tickets sold at the counter on the second = 1812

Number of tickets sold at the counter on the third = 2050

Number of tickets sold at the counter on the final days = 2751

We know that

$$\text{Total number of tickets sold} = 1094 + 1812 + 2050 + 2751 = 7707$$

Therefore, the total number of tickets sold on all the four days is 7, 707.

5. The town newspaper is published everyday. One copy has 12 pages. Everyday 11,980 copies are printed. How many pages are in all printed everyday? Every month?

Solution:

It is given that

$$1 \text{ copy of newspaper contains} = 12 \text{ pages}$$

$$\text{So the number of pages in 11, 980 copies} = 12 \times 11, 980 = 1, 43, 760$$

Hence, 1, 43, 760 pages are printed everyday

We know that

$$\text{Number of pages printed in a month} = 1, 43, 760 \times 30 = 43, 12, 800$$

Therefore, 1, 43, 760 pages are printed every day and 43, 12, 800 pages are printed every month.

6. A machine, on an average, manufactures 2825 screws a day. How many screws did it produce in the month of January 2006?

Solution:

It is given that

$$\text{Number of screws produced per day} = 2, 825$$

$$\text{So the number of screws produced in the month of January} = 2, 825 \times 31 = 87, 575$$

Therefore, the machine produced 87, 575 screws in the month of January 2006.

7. A famous cricket player has so far scored 6978 runs in test matches. He wishes to complete 10, 000 runs. How many more runs does he need?

Solution:

It is given that

$$\text{Runs score by a famous cricket player} = 6978$$

$$\text{So the runs required to complete 10, 000 runs} = 10, 000 - 6978 = 3022$$

Therefore, 3, 022 runs are needed by the cricket player to complete 10, 000 runs.

8. Ravish has ₹ 78, 592 with him. He placed an order for purchasing 39 radio sets at ₹ 1234 each. How much money will remain with him after the purchase?

Solution:

It is given that

$$\text{Amount with Ravish} = ₹ 78, 592$$

$$\text{Cost of 1 radio set} = ₹ 1234$$

$$\text{Number of radio sets purchased} = 39$$

We know that

Amount spent to purchase 39 radio sets = ₹ (1234×39) = ₹ 48126

Amount remaining with Ravish = Amount with Ravish – Amount spent to purchase 39 radio sets

By substituting the values

Amount remaining with Ravish = ₹ 78, 592 – ₹ 48126 = ₹ 30466

Therefore, ₹ 30466 money will remain with Ravish after the purchase.

9. In an election, the successful candidate registered 5, 77, 570 votes and his nearest rival secured 3, 48, 685 votes. By what margin did the successful candidate win the election?

Solution:

It is given that

Number of votes registered by successful candidate = 5, 77, 570

Number of votes secured by nearest rival = 3, 48, 685

We know that

Margin of victory the successful candidate obtain to win the election = Number of votes registered by successful candidate – Number of votes secured by nearest rival

By substituting the values

Margin of victory the successful candidate obtain to win the election = 5, 77, 570 – 3, 48, 685 = 2, 28, 885

Therefore, the margin of victory for the successful candidate is 2, 28, 885.

10. To stitch a shirt 2m 15cm cloth is needed. Out of 40m cloth, how many shirts can be stitched and how much cloth will remain?

Solution:

It is given that

Length of cloth = 40m

Length of cloth required to stitch a shirt = 2m 15cm = 200 + 15 = 215cm

Number of shirts that can be stitched using 40m cloth = $4000 / 215 = 18.60$

We know that the number of shirts should be a whole number, 18 shirts can be stitched.

Length of cloth required to stitch 18 shirts = $215 \times 18 = 3870\text{cm}$

So the remaining cloth = $4000 - 3870 = 130\text{cm} = 1.3\text{m} = 1\text{m } 30\text{cm}$

Therefore, 18 shirts can be stitched and 1m 30cm cloth will remain.

11. A vessel has 4 litre and 650ml of curd. In how many glasses, each of 25ml capacity, can it be distributed?

Solution:

It is given that

Total amount of curd = 4 litre 650ml

We know that 1 litre = 1000ml

Total amount of curd = 4650ml

Capacity of each glass = 25ml

So we get

Number of glasses of curd which can be distributed = Total amount of curd/ Capacity of each glass

By substituting the values

Number of glasses of curd which can be distributed = $4650 / 25 = 186$

Therefore, 186 glasses each of 25ml capacity of curd can be distributed.

12. Medicine is packed in boxes, each such box weighing 4kg 500g. How many such boxes can be loaded in a van which cannot carry beyond 800kg?

Solution:

It is given that

Capacity of van carrying medicine boxes = 800kg

We know that 1kg = 1000g

Capacity of van carrying medicine boxes = 8, 00, 000g

Weight of each box = 4kg 500g = 4500g

We know that

Total number of boxes that can be loaded in a van = Capacity of van carrying medicine boxes/ Weight of each box

By substituting the values

Total number of boxes that can be loaded in a van = $8, 00, 000 / 4500 = 177.77$

Number of boxes should be a whole number

We get

Weight of 177 boxes = $177 \times 4500 = 7, 96, 500$ g which is under the permissible limit

Weight of 178 boxes = $178 \times 4500 = 8, 01, 000$ g which is beyond the permissible limit

Therefore, 177 boxes can be loaded in a van which cannot carry beyond 800kg.

13. The distance between the school and the house of a student is 1km 875m. Everyday she walks both ways between her school and home. Find the total distance covered by her in a week.

Solution:

It is given that

Distance between school and house = 1km 875m = 1875m

We know that

Distance covered by a student per day = $2 \times 1875 = 3750$ m

So we get

Total distance covered by the student in a week = $7 \times 3750 = 26250$ m = 26km 250m

Therefore, the total distance covered by her in a week is 26km 250m.

Exercise 1.6 page: 1.26

1. Round off each of the following numbers to nearest tens:

(i) 84

(ii) 98

(iii) 984

(iv) 808

(v) 998

(vi) 12, 096

(vii) 10, 908

(viii) 28, 925

Solution:

(i) 84 is rounded off to the nearest tens as 80.

(ii) 98 is rounded off to the nearest tens as 100.

(iii) 984 is rounded off to the nearest tens as 980.

(iv) 808 is rounded off to the nearest tens as 810.

(v) 998 is rounded off to the nearest tens as 1000.

(vi) 12, 096 is rounded off to the nearest tens as 12, 100.

(vii) 10, 908 is rounded off to the nearest tens as 10, 910.

(viii) 28, 925 is rounded off to the nearest tens as 28, 930.

2. Round off each of the following numbers to nearest hundreds:

(i) 3, 985

(ii) 7, 289

(iii) 8, 074

(iv) 14, 627

(v) 28, 826

(vi) 4, 20, 387

(vii) 43, 68, 973

(viii) 7, 42, 898

Solution:

(i) 3, 985 is rounded off to the nearest hundreds as 4, 000.

(ii) 7, 289 is rounded off to the nearest hundreds as 7, 300.

(iii) 8, 074 is rounded off to the nearest hundreds as 8, 100.

- (iv) 14, 627 is rounded off to the nearest hundreds as 14, 600.
(v) 28, 826 is rounded off to the nearest hundreds as 28, 800.
(vi) 4, 20, 387 is rounded off to the nearest hundreds as 4, 20, 400.
(vii) 43, 68, 973 is rounded off to the nearest hundreds as 43, 69, 000.
(viii) 7, 42, 898 is rounded off to the nearest hundreds as 7, 42, 900.

3. Round off each of the following numbers to nearest thousands:

- (i) **2, 401**
(ii) **9, 600**
(iii) **4, 278**
(iv) **7, 832**
(v) **9, 567**
(vi) **26, 019**
(vii) **20, 963**
(viii) **4, 36, 952**

Solution:

- (i) 2, 401 is rounded off to the nearest thousands as 2, 000.
(ii) 9, 600 is rounded off to the nearest thousands as 10, 000.
(iii) 4, 278 is rounded off to the nearest thousands as 4, 000.
(iv) 7, 832 is rounded off to the nearest thousands as 8, 000.
(v) 9, 567 is rounded off to the nearest thousands as 10, 000.
(vi) 26, 019 is rounded off to the nearest thousands as 26, 000.
(vii) 20, 963 is rounded off to the nearest thousands as 21, 000.
(viii) 4, 36, 952 is rounded off to the nearest thousands as 4, 37, 000.

4. Round off each of the following to the nearest tens, hundreds and thousands:

- (i) **964**
(ii) **1, 049**
(iii) **45, 634**
(iv) **79, 085**

Solution:

- (i) 964 is rounded off to the nearest tens as 960.
964 is rounded off to the nearest hundreds as 1, 000.
964 is rounded off to the nearest thousands as 1, 000.
(ii) 1, 049 is rounded off to the nearest tens as 1, 050.
1, 049 is rounded off to the nearest hundreds as 1, 000.
1, 049 is rounded off to the nearest thousands as 1, 000.

- (iii) 45, 634 is rounded off to the nearest tens as 45, 630.
45, 634 is rounded off to the nearest hundreds as 45, 600.
45, 634 is rounded off to the nearest thousands as 46, 000.
(iv) 79, 085 is rounded off to the nearest tens as 79, 090.
79, 085 is rounded off to the nearest hundreds as 79, 100.
79, 085 is rounded off to the nearest thousands as 79, 000.

5. Round off the following measures to the nearest hundreds:

- (i) Rs 666
(ii) Rs 850
(iii) Rs 3, 428
(iv) Rs 9, 080
(v) 1, 265 km
(vi) 417m
(vii) 550cm
(viii) 2, 486m
(ix) 360gm
(x) 940kg
(xi) 273l
(xii) 820mg

Solution:

- (i) Rs 666 is rounded off to the nearest hundreds as Rs 700.
(ii) Rs 850 is rounded off to the nearest hundreds as Rs 900.
(iii) Rs 3, 428 is rounded off to the nearest hundreds as Rs 3, 400.
(iv) Rs 9, 080 is rounded off to the nearest hundreds as Rs 9, 100.
(v) 1, 265 km is rounded off to the nearest hundreds as 1, 300km.
(vi) 417m is rounded off to the nearest hundreds as 400m.
(vii) 550cm is rounded off to the nearest hundreds as 600cm.
(viii) 2, 486m is rounded off to the nearest hundreds as 2, 500m.
(ix) 360gm is rounded off to the nearest hundreds as 400gm.
(x) 940kg is rounded off to the nearest hundreds as 900kg.
(xi) 273l is rounded off to the nearest hundreds as 300l.
(xii) 820mg is rounded off to the nearest hundreds as 800mg.

6. List all numbers which are rounded off to nearest ten as 370.

Solution:

The list of numbers which are rounded off to nearest ten as 370 are

365, 366, 367, 368, 369, 370, 371, 372, 373, 374.

7. Find the smallest and greatest numbers which are rounded off to the nearest hundreds as 900.

Solution:

The smallest number which is rounded off to the nearest hundreds as 900 is 850.

The greatest number which is rounded off to the nearest hundreds as 900 is 949.

8. Find the smallest and greatest numbers which are rounded off to the nearest thousands as 9000.

Solution:

The smallest number which is rounded off to the nearest thousands as 9000 is 8, 500.

The greatest number which is rounded off to the nearest thousands as 9000 is 9, 499.

Exercise 1.7 page: 1.29

1. Estimate the following by rounding off each factor to nearest hundreds:

(i) $730 + 998$

(ii) $796 - 314$

(iii) $875 - 384$

Solution:

(i) It can be rounded off to the nearest hundreds as $700 + 1000 = 1, 700$.

(ii) It can be rounded off to the nearest hundreds as $800 - 300 = 500$.

(iii) It can be rounded off to the nearest hundreds as $900 - 400 = 500$.

2. Estimate the following by rounding off each factor to nearest thousands:

(i) $12, 094 + 2, 888$

(ii) $28, 292 - 21, 496$

Solution:

(i) It can be rounded off to the nearest thousands as $13, 000 + 3, 000 = 16, 000$.

(ii) It can be rounded off to the nearest thousands as $28, 000 - 21, 000 = 7, 000$.

3. Estimate the following by rounding off each number to its greatest place:

(i) $439 + 334 + 4, 317$

(ii) $8, 325 - 491$

(iii) $1, 08, 734 - 47, 599$

(iv) 898×785

(v) 9×795

(vi) 87×317

Solution:

- (i) It can be rounded off to its greatest place as $400 + 300 + 4,000 = 4,700$.
- (ii) It can be rounded off to its greatest place as $8,000 - 500 = 7,500$.
- (iii) It can be rounded off to its greatest place as $1,00,000 - 50,000 = 50,000$.
- (iv) It can be rounded off to its greatest place as $900 \times 800 = 7,20,000$.
- (v) It can be rounded off to its greatest place as $10 \times 800 = 8,000$.
- (vi) It can be rounded off to its greatest place as $90 \times 300 = 27,000$.

4. Find the estimated quotient for each of the following by rounding off each number to its greatest place:

(i) $878 \div 28$

(ii) $745 \div 24$

(iii) $4489 \div 394$

Solution:

- (i) It can be rounded off to its greatest place as $900 \div 30 = 30$.
- (ii) It can be rounded off to its greatest place as $700 \div 20 = 35$.
- (iii) It can be rounded off to its greatest place as $4000 \div 400 = 10$.

Exercise 1.8 page: 1.30

1. Write the expression for each of the following statements using brackets:

- (i) Four multiplied by the sum of 13 and 7.**
- (ii) Eight multiplied by the difference of four from nine.**
- (iii) Divide the difference of twenty eight and seven by 3.**
- (iv) The sum of 3 and 7 is multiplied by the difference of twelve and eight.**

Solution:

- (i) The expression for Four multiplied by the sum of 13 and 7 is $4 \times (13 + 7)$.
- (ii) Eight multiplied by the difference of four from nine is $8 \times (9 - 4)$.
- (iii) Divide the difference of twenty eight and seven by 3 is $(28 - 7) \div 3$.
- (iv) The sum of 3 and 7 is multiplied by the difference of twelve and eight

2. Simplify each of the following:

(i) $124 - (12 - 2) \times 9$

(ii) $(13 + 7) \times (9 - 4) - 18$

(iii) $210 - (14 - 4) \times (18 + 2) - 10$

Solution:

- (i) $124 - (12 - 2) \times 9$ on further simplification we obtain
 $124 - (12 - 2) \times 9$

$$= 124 - 10 \times 9$$

$$= 124 - 90$$

$$= 34$$

(ii) $(13 + 7) \times (9 - 4) - 18$ on further simplification we obtain

$$(13 + 7) \times (9 - 4) - 18$$

$$= 20 \times 5 - 18$$

$$= 100 - 18$$

$$= 92$$

(iii) $210 - (14 - 4) \times (18 + 2) - 10$ on further simplification we obtain

$$210 - (14 - 4) \times (18 + 2) - 10$$

$$= 210 - 10 \times 20 - 10$$

$$= 210 - 200 - 10$$

$$= 0$$

Exercise 1.9 page: 1.31

Simplify each of the following:

1. 7×109

2. 6×112

3. 9×105

4. 17×109

5. 16×108

6. 12×105

7. 102×103

8. 101×105

9. 109×107

Solution:

1. On simplification of 7×109 we get

$$7 \times 109 = 763.$$

2. On simplification of 6×112 get

$$6 \times 112 = 672.$$

3. On simplification of 9×105 we get

$$9 \times 105 = 945.$$

4. On simplification of 17×109 we get

$$17 \times 109 = 1853.$$

5. On simplification of 16×108 we get
 $16 \times 108 = 1728$.
6. On simplification of 12×105 we get
 $12 \times 105 = 1260$.
7. On simplification of 102×103 we get
 $102 \times 103 = 10506$.
8. On simplification of 101×105 we get
 $101 \times 105 = 10605$.
9. On simplification of 109×107 we get
 $109 \times 107 = 11663$.
-

Exercise 1.10 page: 1.35

1. Write the roman-numerals for each of the following:

- (i) **33**
(ii) **48**
(iii) **76**
(iv) **95**

Solution:

- (i) The roman-numeral of 33 is XXXIII.
(ii) The roman-numeral of 48 is XLVIII.
(iii) The roman-numeral of 76 is LXXVI.
(iv) The roman-numeral of 95 is XCV.

2. Write the following in Roman numerals:

- (i) **154**
(ii) **173**
(iii) **248**
(iv) **319**

Solution:

- (i) The roman-numeral of 154 is CLIV.
(ii) The roman-numeral of 173 is CLXXIII.
(iii) The roman-numeral of 248 is CCXLVIII.
(iv) The roman-numeral of 319 is CCCXIX.

3. Write the following in Roman numerals:

- (i) **1008**

(ii) 2718

(iii) 3906

(iv) 3794

Solution:

(i) The roman-numeral of 1008 is **KVIII**.

(ii) The roman-numeral of 2718 is **KKDCCXVIII**.

(iii) The roman-numeral of 3906 is **KKKCKVI**.

(iv) The roman-numeral of 3794 is **KKKDCCXCIV**.

4. Write the following in Roman numerals:

(i) 4201

(ii) 10009

(iii) 44000

(iv) 25819

Solution:

(i) The roman-numeral of 4201 is
IVCCI.

(ii) The roman-numeral of 10009 is **XIX**.

(iii) The roman-numeral of 44000 is
XLIV.

(iv) The roman-numeral of 25819 is
XXVDCCCXIX.

5. Write the following in Hindu-Arabic numerals:

(i) XXVI

(ii) XXIX

(iii) LXXII

(iv) XCI

Solution:

(i) The Hindu-Arabic numerals of XXVI is 26.

(ii) The Hindu-Arabic numerals of XXIX is 29.

(iii) The Hindu-Arabic numerals of LXXII is 72.

(iv) The Hindu-Arabic numerals of XCI is 91.

6. Write the corresponding Hindu-Arabic numerals for each of the following:

(i) CIX

(ii) CLXXII

(iii) CCLIV

(iv) CCCXXIX

Solution:

- (i) The Hindu-Arabic numerals of CIX is 109.
- (ii) The Hindu-Arabic numerals of CLXXII is 172.
- (iii) The Hindu-Arabic numerals of CCLIV is 254.
- (iv) The Hindu-Arabic numerals of CCCXXIX is 329.

7. Write the corresponding Hindu-Arabic numerals for each of the following:

- (i) **KXIX**
- (ii) **KDLXV**
- (iii) **KKCXXIII**
- (iv) **KKKDCXL**

Solution:

- (i) The Hindu-Arabic numerals of KXIX is 1019.
- (ii) The Hindu-Arabic numerals of KDLXV is 1565.
- (iii) The Hindu-Arabic numerals of KKCXXIII is 2123.
- (iv) The Hindu-Arabic numerals of KKKDCXL is 3640.

8. Write the following in Hindu-Arabic numerals:

- (i) $\overline{IVCDXLIV}$
- (ii) $\overline{VICKXLIX}$
- (iii) $\overline{IXCCCXCI}$
- (iv) \overline{LXXIX}

Solution:

- (i) The Hindu-Arabic numerals of $\overline{IVCDXLIV}$ is 4444.
- (ii) The Hindu-Arabic numerals of $\overline{VICKXLIX}$ is 6949.
- (iii) The Hindu-Arabic numerals of $\overline{IXCCCXCI}$ is 9391.
- (iv) The Hindu-Arabic numerals of \overline{LXXIX} is 70009.

9. Which of the following are meaningless?

- (i) $\overline{III}CC$
- (ii) **KKKCCXI**
- (iii) **XD**
- (iv) **VC**

Solution:

In the given question we know that (i) and (iii) are meaningless.

Mark the correct alternative in each of the following:

1. The difference between the place value and face value of 8 in 658742 is

(a) 0 (b) 42 (c) 735 (d) 693

Solution:

The given options are incorrect.

Place value of 8 in 6,58,742 = 8,000

Face value of 8 = 8

Difference between them = $8,000 - 8 = 7,992$

2. The difference between the place values of 6 and 3 in 256839 is

(a) 3 (b) 9 (c) 6800 (d) 5930

Solution:

The given options are incorrect.

Place value of 6 in 2,56,839 = 6,000

The place value of 3 in 2,56,839 = 30

Difference between them = $6,000 - 30 = 5,970$

3. The difference of the smallest three digit number and the largest two digit number is

(a) 100 (b) 1 (c) 10 (d) 99

Solution:

The option (b) is the correct answer.

We know that

The smallest three-digit number is 100 and the largest two-digit number is 99.

So the difference between them = $100 - 99 = 1$

4. The largest three digit number formed by the digits 8, 5, 9 is

(a) 859 (b) 985 (c) 958 (d) 589

Solution:

The option (b) is the correct answer.

We know that the largest number is formed by writing the digits in descending order.

5. The smallest three digit number having three distinct digits is

(a) 123 (b) 101 (c) 102 (d) 201

Solution:

The option (c) is the correct answer.

We know that the smallest three digit numbers are 0, 1 and 2

By arranging them in ascending order we get 012 which is a two digit number.

Hence, 102 is the smallest three digit number.

6. The largest three digit number having distinct digits is

(a) 987 (b) 789 (c) 999 (d) 900

Solution:

The option (a) is the correct answer.

The largest three digit numbers are 7, 8 and 9. The largest number is obtained by arranging them in descending order.

7. The difference between the largest three digit number and the largest three digit number with distinct digits is

(a) 10 (b) 0 (c) 12 (d) 13

Solution:

The option (c) is the correct answer.

We know that Largest three digit number = 999

Largest three-digit number with distinct digits = 987

Difference between them = $999 - 987 = 12$

8. The product of the place values of two threes in 53432 is

(a) 9000 (b) 90000 (c) 10000 (d) 99000

Solution:

The option (b) is the correct answer.

We know that 3 in the second place from right is at tens place.

So the place value of 3 at tens place = 30

We know that 3 in the fourth place from right is at thousands place.

So the place value of 3 at thousands place = 3,000

Product of the place values = $3,000 \times 30 = 90,000$

9. The smallest counting number is

(a) 0 (b) 1 (c) 10 (d) None of these

Solution:

The option (b) is the correct answer.

We know that the smallest digit is zero and the smallest counting number is 1.

10. The total number of 4 digit numbers is

(a) 8999 (b) 9000 (c) 8000 (d) 9999

Solution:

The option (b) is the correct answer.

We know that the smallest four digit number = 1,000

Largest four digit number = 9,999.

So the total number of four-digit numbers = $[9,999 - 1,000] + 1 = 9,000$

11. The number of 3 digit numbers formed by using digits 3, 5, 9, taking each digit exactly once, is

(a) 3 (b) 4 (c) 5 (d) 6

Solution:

The option (d) is the correct answer.

359, 395, 539, 593, 935 and 953 are the numbers.

12. Total number of numbers which when rounded off to nearest ten give us 200 is

(a) 9 (b) 10 (c) 8 (d) 7

Solution:

The option (b) is the correct answer.

195, 196, 197, 198, 199, 200, 201, 202, 203, 204 are the numbers that when rounded off to nearest ten give us.

13. The smallest number which when rounded off to the nearest hundred as 600, is

(a) 550 (b) 595 (c) 604 (d) 599

Solution:

The option (a) is the correct answer.

The number from 550 to 649 are rounded off nearest hundred as 600. Hence, the smallest number is 550.

14. The greatest number which when rounded off to the nearest thousand 7000, is

(a) 6500 (b) 6549 (c) 7499 (d) 6499

Solution:

The option (c) is the correct answer.

Numbers from 6500 to 7499 are rounded off to nearest thousand as 7000. Hence, the greatest number is 7499.

15. The difference between the greatest and smallest numbers which when rounded off a number to the nearest tens as 540, is

(a) 10 (b) 9 (c) 8 (d) 10

Solution:

The option (b) is the correct answer.

We know that the greatest number that when rounded off to the nearest tens will become 540 = 544

Least number that when rounded off to the nearest tens will become 540 = 535

So, the difference between them = $544 - 535 = 9$

16. The difference between the greatest and smallest numbers which when rounded off a number to the nearest hundred as 6700, is

(a) 100 (b) 99 (c) 98 (d) 101

Solution:

The option (b) is the correct answer.

We know that the greatest number that when rounded off to the nearest hundred will become 6,700 = 6749

Least number that when rounded off to the nearest hundred will become 6,700 = 6650

So, the difference between them = $6,749 - 6,650 = 99$

17. The difference between the greatest and the smallest numbers which when rounded off to the nearest thousand as 9000, is

(a) 1000 (b) 990 (c) 999 (d) 900

Solution:

The option (c) is the correct answer.

We know that the greatest number that when rounded off to the nearest thousand becomes 9,000 = 9499

Smallest number that when rounded off to the nearest thousand becomes 9,000 = 8500

So, the difference between them = $9,499 - 8,500 = 999$

18. Which of the following numbers is equal to 1 billion?

(a) 10 lakh (b) 1 crore (c) 10 crore (d) 100 crore

Solution:

The option (d) is the correct answer.

1 billion = 100 crore

19. In the international place value system, we write one million for

(a) 1 lakh (b) 10 lakh (c) 100 lakh (d) 1 crore

Solution:

The option (b) is the correct answer.

One million = 10 lakh

20. Which of the following is not meaningful?

(a) XIV (b) XXXV (c) XXV (d) VX

Solution:

The option (d) is the correct answer.

In Roman numerals V is 5 and X is 10

5 cannot be written before 10

21. Which of the following is not meaningful?

(a) XXII (b) XII (c) XVV (d) XIV

Solution:

The option (c) is the correct answer.

In Roman numerals V is 5 and X is 10

5 cannot be written two times.

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