MATHEMATICS
Class-VI

Chapter-1   Module-5/8
KNOWING OUR NUMBERS

Estimation of Number

Estimation involves approximating a quantity to an accuracy required.

Hence, 4117 may be approximated to 4100 or to 4000, i.e. to the nearest hundred or to the nearest thousand depending on our need.

Before estimation we must know how to round off a number to the nearest ten, nearest hundred, nearest thousand, etc.

Rounding a number to the nearest ten

Step-1   See the ones digit of the given number

Step-2   If ones digit is less than 5, replace ones digit by 0 and keep the other digits as they are.

Step-3   if one digit is 5 or more, increase tens digit by 1 and replace ones digit by 0

Example : Round each of the following number nearest to 10

   a. 53
   b. 283
   c. 3854
   d. 2045

Ans:

   a. In 53, the ones digit is 3< 5
       Hence the required number is 50 + 3 = 50 + 0
                                              = 50

   b. In 287, the ones digit is 7> 5
       Hence the required number is 280 +7 = 280 + 10
                                            = 290

   c. In3854, the ones digit is 4< 5
       Hence the required number is 3850 + 4= 3850 + 0
                                              = 3850

   d. In2045, the ones digit is 5= 5
       Hence the required number is 2040 + 5= 2040 + 10
                                              = 2050

Rounding a number to the nearest hundred

Step-1   See the tens digit of the given number

Step-2   If tens digit is less than 5, replace each one of tens and ones digit by 0 and keep the other digits as they are.

Step-3   if tens digit is 5 or more, increase hundreds digit by 1 and replace each digit on its right by 0.

Example : Round each of the following number nearest to 100

    a. 648
    b. 2356
    c. 13789
    d. 1245

Ans:

    a. In 648, the tens digit is 48< 50
       Hence the required number is 600 +48= 600 +0 0

$$= 600$$

    b. In 2356, the tens digit is 56> 50
       Hence the required number is 2300 +56   = 2300 +100
                                              = 2400

    c. In 13789, the tens digit is 89> 50
       Hence the required number is 13700 +89   = 13700 +100
                                              = 13800

    d. In 1245, the tens digit is 45< 50
       Hence the required number is 1200 + 45   = 1200 +00
                                              = 1200

Rounding a number to the nearest thousand

Step-1   See the hundreds digit of the given number

Step-2   If hundreds digit is less than 5, replace each one of hundreds, tens and ones digit by 0 and keep the other digits as they are.

Step-3   if hundreds digit is 5 or more, increase thousands digit by 1 and replace each digit on its right by 0.

Example : Round each of the following number nearest to 1000

    a. 5486
    b. 6823
    c. 14387
    d. 23695

Ans :
a. In 5486, the hundreds digit is 486< 500
   Hence the required number is 5000 + 486   = 5000 +000
                                              = 5000

b. In 6823, the hundreds digit is 823 > 500
   Hence the required number is 6000 + 823   = 6000 + 1000
                                              = 7000

c. In 14386, the hundreds digit is 386 < 500
   Hence the required number is 14000 +386   = 14000 +00
                                              = 14000

d. In 23695, the hundreds digit is 695 > 500
   Hence the required number is 23000 +695   = 23000 +1000
                                              = 24000

Addition of Estimated Number

Let us see the example of addition of estimation of number.
1. Estimate the sum [64 + 79] to the nearest ten
   Ans :   64 estimated to the nearest ten= 60
              79 Estimated to the nearest ten=80
              Hence the required estimation = 64 + 79
                                            = 60 +80
                                            = 140

2. Estimate the sum [267 +132] to the nearest hundred
   Ans :   267 estimated to the nearest hundred=300
              132Estimated to the nearest hundred =100
              Hence the required estimation = 267 + 132
                                             = 300 + 100
                                             = 400

3. Estimate the sum [21397+ 27807+44039] to the nearest thousand
   Ans :   21397 estimated to the nearest thousand =21000
              27807 estimated to the nearest thousand =28000
              44039 estimated to the nearest thousand =44000
              Hence the required estimation = 21397 + 27807 + 44039
                                            = 21000 + 28000 + 44000
                                            = 93000

Subtraction of Estimated Number

Let us see the subtraction of estimation of number

1. Estimate the difference (64 - 39) to the nearest tens

    Ans :   64 estimated to the nearest ten= 60

    39 Estimated to the nearest ten=40

    Hence the required estimation = 64 - 39

    = 60 - 40

    = 20

2. Estimate the difference (267 - 132) to the nearest hundred

    Ans :   267 estimated to the nearest hundred=300

    132Estimated to the nearest hundred =100

    Hence the required estimation   = 267 - 132

    = 300 - 100

    = 200

3. Estimate the difference (27807 - 24339) to the nearest thousand

    Ans :   27807 estimated to the nearest thousand =28000

    24339 estimated to the nearest thousand =24000

    Hence the required estimation = 27807 + 24339

    = 28000 - 24000

    = 4000

Multiplication of Estimated Number

1. Estimate the Product (64 x 39) to the nearest tens

    Ans : 64 estimated to the nearest ten= 60

    39 Estimated to the nearest ten=40

    Hence the required estimation = 64 x 39

    = 60 x 40

    = 2400

2. Estimate the Product (267 x 132) to the nearest hundred

    Ans : 267 estimated to the nearest hundred=300

    132Estimated to the nearest hundred =100

    Hence the required estimation   = 267 x 132

    = 300 x 100

    = 30000

3. Estimate the Product (7807 x 4339) to the nearest thousand

    Ans :   7807 estimated to the nearest thousand =8000

    4339 estimated to the nearest thousand =4000

    Hence the required estimation = 7807 + 4339

    = 8000 - 4000

    = 32000000

Thank You