

CHAPTER 16

PLAYING WITH NUMBERS

- Any two digit number can be written as ab , where a and b are its tens and ones digit respectively.
- (a) A 2-digit number is of the form $10a + b$, where a is any whole number from 1 to 9 and b is any whole number from 0 to 9.
- (b) A 3-digit number is of the form $100a + 10b + c$, where a is any whole number from 1 to 9, b is any whole number from 0 to 9 and c is any whole number from 0 to 9.
- **Test of divisibility :**
 - (a) A number is divisible by 2 only when its unit digit is even.
 - (b) A number is divisible by 3 only when the sum of its digits is divisible by 3.
 - (c) A number is divisible by 4 if the number formed by its last two digits is divisible by 4.
 - (d) A number is divisible by 5 only when its unit digit is 0 or 5.
 - (e) A number is divisible by 6, if it is divisible by both 2 and 3.
 - (f) A number is divisible by 8, if it is divisible by both 2 and 4.
 - (g) A number is divisible by 9 only when the sum of its digits is divisible by 9.
 - (h) A number is divisible by 10, if its unit digit is zero.
- A number is even or odd according to its ones digit.

Ex. Check the divisibility of 21436587 by 9.

Sol. Step I : A number N is divisible by 9 if the sum of its digit is divisible by 9.

Hence sum of digits of 21436587

$$= 2 + 1 + 4 + 3 + 6 + 5 + 8 + 7 = 36$$

$$36 \div 9 = 4$$

Step II : Divide the given number 9.

i.e.
$$\frac{21436587}{9} = 2381843$$