

ASSIGNMENT – 4 (MATHEMATICS)

CLASS – 8

Copy the notes in your maths copy and then do the homework in the same copy.

CHAPTER - 5

PLAYING WITH NUMBERS

Divisibility by 10:-

A number is divisible by 10 if its unit's digit is 0.

For example – 20, 640, 7680, 78950 etc.

For a number in generalized form

- a) A 2-digit number ab i.e. $10a + b$ is divisible by 10 if $b = 0$.
- b) A 3-digit number abc i.e. $100a + 10b + c$ is divisible by 10 if last digit of a number that is $c = 0$.

Divisibility by 5:-

A number is divisible by 5 if its unit's digit is 0 or 5.

For example – 65, 605, 650, 6500 etc.

For a number in generalized form

- a) A 2-digit number ab is divisible by 5 if $b = 0$ or 5
- b) A 3-digit number $abc = 100a + 10b + c$ is divisible by 5 if $c = 0$ or 5

Divisibility by 2:-

A number is divisible by 2 if its last digit is divisible by 2 i.e. 0, 2, 4, 6, 8

For example – 670, 232, 5448, 31796 etc.

For a number in generalized form

- a) A 2-digit number ab is divisible by 2 if $b = 0, 2, 4, 6, 8$
- b) A 3-digit number abc is divisible by 2 if $c = 0, 2, 4, 6, 8$

Divisibility by 3:-

A number is divisible by 3 if the sum of its digits is divisible by 3.

For example:- 6785001 is divisible by 3.

Since the sum of digits = $6 + 7 + 8 + 5 + 0 + 0 + 1 = 27$, which is divisible by 3.

For a number in generalized form

- a) A 2-digit number ab is divisible by 3, if sum of its digit is divisible by 3.
- b) A 3-digit number abc is divisible by 3, if sum of its digits is divisible by 3.

Divisibility by 9:-

A number is divisible by 9 if the sum of its digits is divisible by 9.

For example – 43512336 is divisible by 9

The sum of digits = $4 + 3 + 5 + 1 + 2 + 3 + 3 + 6 = 27$, which is divisible by 9.

For a number in generalized form

A 2-digit number $ab = 10a + b$ or 3-digit number $abc = 100a + 10b + c$ is divisible by 9, if sum of its digits is divisible by 9.

EXERCISE 5.3

Q. no.1 – Which of the following numbers are divisible by 5 or by 10

- i) 87035
- ii) 75060

Solution:- i) The last digit of number 87035 is 5, so it is divisible by 5.

ii) The last digit of number 75060 is 0, we know that if unit's digit or last digit of number is 0 then it is divisible by 5 and 10.

Q. no.3 – Which of the following numbers are divisible by 3 or 9:

i) 45639

iv) 345903

Solution - i) sum of the digits = $4 + 5 + 6 + 3 + 9 = 27$, which is divisible by 3 and 9 both.

So, the number 45639 is divisible by both 3 and 9

iv) sum of the digits = $3 + 4 + 5 + 9 + 0 + 3 = 24$, which is divisible by 3. So, the number 345903 is divisible by 3.

Q.no.6 i) If $34x$ is a multiple of 3, where x is a digit, what is the value of x ?

Solution – if $34x$ is a multiple of 3

$$\text{Then } 3 + 4 + x = 7 + x$$

For any number to be divisible by 3, the sum of its digits of that number should be a multiple of 3.

If $x = 2$ then $7 + x = 7 + 2 = 9$, which is divisible by 3

Other than this if we take $x = 5$ then $7 + 5 = 12$, which is also divisible by 3.

And if $x = 8$ then $7 + x = 7 + 8 = 15$, which is divisible by 3

Again If we take $x = 11$ then $7 + 11 = 18$, which is divisible by 3 but we cannot take 11 because x is a digit.

So, the value of $x = 2, 5$ and 8

Q. no.8:- Replace * by a digit so that the number formed is divisible by 9:
i) 49*2207

Solution:- Sum of its digits = $4 + 9 + * + 2 + 2 + 0 + 7$
 $= 24 + *$

We know that a number is divisible by 9 if sum of its digits is divisible by 9. If we take 3 in place of * then the sum becomes 27 and hence it is divisible by 9.

So, * = 3 and the number is 4932207

Home-work:

Exercise 5.3 question no. 1- (iii), (iv), 3- (ii), (iii), (v) , 6- (ii), 7, 8- (ii),
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