ODM EDUCATIONAL GROUP
Changing your Tomorrow

PLAYING WITH NUMBERS

PERIOD 5

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 5
CHAPTER NAME : PLAYING WITH NUMBERS

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Learning outcome:

Students will be able to solve the possible values of letters related to test of divisibility of numbers.

Previous knowledge:

1) Find which of the following numbers are divisible by 5 :

(i) 3250 (ii) 5557 (iii) 39255 (iv) 8204

Sol: A number having its unit digit is 5 or 0, is divisible by 5. So, numbers 3250, 39255 are all divisible by 5.

2) Find which of the following numbers are divisible by 10:

(i) 5100 (ii) 4612 (iii) 3400 (iv) 8399

Sol: : A number having its unit digit is 0, is divisible by 10. So, numbers 5100,3400 are all divisible by 10.

Exercise-5(D)

For what value of digit x, is :

1) 1×5 divisible by 3?

Sol: 1×5 is divisible by 3

$\Rightarrow 1 + x + 5$ is a multiple of 3

$\Rightarrow 6 + x = 0, 3, 6, 9,$

$\Rightarrow x = -6, -3, 0, 3, 6, 9$

Since, x is a digit

$x = 0, 3, 6$ or 9

2) 31×5 divisible by 3?

Sol: 31×5 is divisible by 3

$\Rightarrow 3 + 1 + x + 5$ is a multiple of 3

$\Rightarrow 9 + x = 0, 3, 6, 9,$

$\Rightarrow x = -9, -6, -3, 0, 3, 6, 9,$

Since, x is a digit

$x = 0, 3, 6$ or 9

Exercise-5(D)

3) 28×6 a multiple of 3?

Sol: 28×6 is a multiple of 3

$2 + 8 + x + 6$ is a multiple of 3

$\Rightarrow 16 + x = 0, 3, 6, 9, 12, 15, 18$

$\Rightarrow x = -18, -5, -2, 0, 2, 5, 8$

Since, x is a digit = 2, 5, 8

5) 3×26 a multiple of 6?

Sol: 3×26 is a multiple of 6

$3 + x + 2 + 6$ is a multiple of 3

$\Rightarrow 11 + x = 0, 3, 6, 9, 12, 15, 18, 21,$

$\Rightarrow x = -11, -8, -5, -2, 1, 4, 7, 10, \ldots.$

Since, x is a digit

$x = 1, 4$ or 7

Exercise-5(D)

9) 5×555 a multiple of 9 ?

Sol: Sum of the digits of 5×555

= 5 + x + 5 + 5 + 5 = 20 + x

It is multiple by 9

The sum should be divisible by 9

Value of x will be 7

10) 3×2 divisible by 11?

Sol: Sum of the digit in even place = x

and sum of the digits in odd place = 3 + 2 = 5

Difference of the sum of the digits in even places and in odd places = x − 5

3×2 is a multiple of 11

⇒ x − 5 = 0, 11, 22,

⇒ x = 5, 16, 27,

Since, x is a digit x = 5

Home assignment

Exercise 5(D)

AHA

1. **If 148101B095 is divisible by 33, find the value of B.**
2. **If 123123A4 is divisible by 11, find the value of A.**

THANKING YOU

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