HW
1/7/21

Homework

1. Find which of the following numbers are divisible by 2:

i) 352

Solution:

A number is divisible by 2, if the units place digit is an even number. Because, 352 has an even number 2 in units place, so, it is divisible by 2.

ii) 523

Solution:

As, a number with the even number in units place is divisible

by 2 and 523 has no even number at ones place, so, it is not divisible by 2.

iii) 496

Solution:

As, 496 has even number 6 in the units place so, it is divisible by 2.

iv) 649.

Solution:

As, 649 doesnot has even number at units place, so, it is not divisible by 2.

2. Find which of the following numbers are divisible by 3:

i) 221

Solution:

A number is divisible by three if its sum of the digits is divisible by 3, so, 2+2+1=5 is not divisible by 3 or 221 is not divisible by 3.

ii) 543

Solution:

As, 5+4+3=12, so, 543 is divisible by 3.

iii) 28492

Solution:

As, 2+8+4+9+2=25, so 28492 is not divisible by 3.

iv) 92349

Solution:

9+2+3+4+9=27, so, 92349 is divisible by 3.

2. Find which of the following numbers are divisible by 4.

i) 222

Solution:

A number is divisible by 4 if its tens and ones place together is divisible by 4 or As, 22 in 222 is not divisible by 4.

ii) 532

Solution:

As, 32 is divisible by 4, so, 532 is divisible by 4.

iii) 678

Solution:

As, 78 is not divisible by 4 so, ~~532 is~~ 678 is not divisible by 4.

iv) 9232

Solution:

As, 32 is divisible by 4, so, 9232 is divisible by 4.

5. Find which of the following numbers are divisible by 9.

i) 1332

Solution:

A number is divisible by 9, if, ~~its~~ the sum of its digits is divisible by 9, as, 1+3+3+2 = 9, so, 1332 is divisible by 9.

ii) 53247

Solution:

As, 5+3+2+4+7 = 21 is not divisible by 9, ~~if~~ so, 53247 is not divisible by 9.

iii) 4968.

Solution:

As, 4+9+6+8 = 27 is divisible by 9, so, 4968 is divisible by

9.

iv) 200314.

Solution:

As, 200314 = 2+0+0+3+1+4 = 10 is not divisible by 9, so, 200314 is not divisible by 9.

6. Find which of the following are divisible by 6:

i) 324.

Solution:

A number is divisible by 324, if it is divisible by 2 and 3. 324 is divisible by 2 and 3, so, it is divisible by 6.

ii) 2010.

Solution;

As, 2010 is divisible by 2 and 3, so, it is divisible by 6.

iii) 33278.

Solution:

As, 33278 is divisible by 2, but not by 3, so, it is not

divisible by 6.

iv) 15505

Solution:
As, 15505 is not divisible by 2 and 3, so, it is not divisible by 6.

7. Find which of the following are divisible by 5.

i) 5080

Solution:
A number is divisible by 5 if it has 0 or 5 in ones or unit place. As 5080 has 0 in units place, so, it is divisible by 5.

ii) 66666

Solution:
As, 66,666 has no 0 or 5 in the units place, it is not divisible by 5.

iii) 755

Solution:
As, 755 has 5 in units place, so, it is divisible by 5.

iv) 9207

Solution:

As, 9207 has no 5 or 0 in units place so, it is not divisible by 5.

8. Find which of the following numbers are divisible by 10:

i) 990.

A number is divisible by 10, if it has 0 at ones place.
As, 990 has 0 at ones place, so, it is divisible by 10.

ii) 0.

As, the number is 0 itself, so, it is divisible by 10.

iii) 847

As, 847 does not has 0 in ones place, so, it is not divisible by 10.

iv) 8976.

8976 is not divisible by 10 because it does not has 0 in ones place.

A number is divisible by 8, if the last three places digits of the number, i.e. hundreds, tens and ones place are divisible by 8, then the number is divisible by 8. Example- 3776 is divisible by 8, but 3676 is not.

Divisibility by 11

A number is divisible by 11, if the difference of sum of its digits in odd places and even places from the right side is divisible by 11 or is 0. Ex- 23579 is divisible by 11 as $2+5+9=16$ and $3+7=10$, $16-10=6$ which is not divisible by 11.

Exercise 9 (c)

9. Find which of the following numbers are divisible by 11.

ii) 68,717

Solution:

Sum of digits in even places $= 7+8 = 15$

Sum of digits in odd places $= 1+1 = 2$

Difference $= 15-2 = 13$

Since 13 is not divisible by 11, 68,717 is not divisible by 11.

Sum of digits in odds place digits = 6+7+7 = 20

Difference between the sum of even place digits and odd place digits = 20-9 = 11, As, 11 is divisible by 11, so, 68,717 is divisible by 11.

11. i) 64M3 = 6+4+m+3 = 13+m

64m3 is divisible by 3 if 13+m is divisible by 3

∴ If m=2, 13+2=15, which is divisible by 3.

12) i) 76M91 = 7+6+M+9+1 = 23+M

The smallest number that should be replaced = 4

23+4 = 27

∴ The smallest number is 76491.

Homework

Exercise 9(C)

11. i) 46M46 = ~~4+6+M+4+6~~ 4+6+M+4+6 = 20+M

46M46 is divisible by 3 if 20+M is divisible by 3.

If m = ~~1~~, ~~3~~ 20+1 = 21, which is divisible by 3

iii) 27M53

Solution:

2+7+M+5+3 = 17+M

27M53 is divisible by 3 if 17+M is divisible by 3.

If m=1, 17+1 = 18, which is divisible by 3.

So, the number is 27153.

12.ii) 77548M

= 7+7+5+4+8+M = 31+M

77548M is divisible by 9, if 31+M is divisible by 9.

If, m=5, 31+5=36, which is divisible by 9.

The required number is 775485

iii) 627M9

6+2+7+M+9 = M+24

627M9 is divisible by 9, if M+24 is divisible by 9.

If, m=3, 24+3=27, which is divisible by 9.

The required number is 62739.

14.i) If a number is divisible by 4, it is divisible by 8.E.

ii) If a number is a factor of 16 and 24, it is a factor of 48. True.

iii) If a number is divisible by 18, it is divisible by 3 and 6. True.

iv) If a divides both b and c completely, then a

divides i) a+b ii) a-b also completely. True

Ans 7/5/22

10. Find which of the following numbers are divisible by 15:-

i) 960

Solution:
A number is divisible by 15 if it is divisible by 3 and 5 both.

9+6+0 = 15
960 is divisible by 3.
960 is divisible by 15.

Yes, 960 is divisible by 15.

ii) 8295

Solution:
8+2+9+5 = 24
8295 is divisible by 3.
8295 is divisible by 5.
Yes, 8295 is divisible by 15.

iii) 10243

Solution:
1+0+2+4+3 = 10
10243 is not divisible by 3.
∴No, 10243 is not divisible by 15.

iv) 5013
Solution:
5+0+1+3 = 9
5013 is divisible by 3.
5013 is not divisible by 5.
So, 5013 is not divisible by 15.

13. i) 39M2

Sum of odd place digits = ~~3+M~~ 9+2 = 11
Sum of even place digits = 3+M

11 − (3+m)

= ~~8 − 3~~ 8 − m = 0
m = 8.
So, the required number is 8.

ii) 3M422
Solution:
Sum of odd place digits = 2+4+3 = 9
Sum of even place digits = M+2.
= 9 − (2+M)
= 7 − M = 0
So, the required number is 7.

iii) 709 75 M

Solution:
Sum of odd place digits = 0+7+M = 7+M
Sum of even place digits = 7+9+5 = 21
21 − (7+M)
The number is divisible by 11, if 21−M is divisible by 11 or is 0, If M = 3

iv) 14M75

Solution:
Sum of odd place digits = 1+M+5 = M+6
Sum of even place digits = 4+7 = 11

11 − (M+6)
= 11 − M − 6 = 11 − 6 − M
= 5 − M
= 5 − 5

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