

## DIVISIBILITY RULES

A no. is divisible by ...

- [1] If the last digit is even (0, 2, 4, 6, 8 etc)
- [2] If the sum of the digits is divisible by 3
- [3] If last 2 digits for a no. divisible by 4
- [4] If last digit is 5 or 0
- [5] If ~~last~~ no. is divisible by both 2 and 3
- [6] If the sum of the digits is divisible by 9.
- [7] If the last digit is 0.

Hw

EX - 9(2)

Q1) Find which of the following nos. are divisible by 2 -

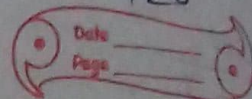
i) 352

ans - 352 and 496

ii) 523

iii) 496

iv) 649



Q2) ~~ii~~ Find which of the following nos are divisible by 4:-

i) 222

ans- 532 and 9232

ii) 532

iii) 678

iv) 9232

Q9) Find which of the following nos. are divisible by 3:-

i)  $221 = 2+2+1 = 5$

ans- ~~12~~ and ~~2~~  
543 and  
92349

ii)  $543 = 5+4+3 = 12$  ✓

iii)  $28492 = 2+8+4+9+2 = 25$  ✗

iv)  $92349 = 9+2+3+4+9 = 27$  ✓

Q5) Find which of the following nos. are divisible by

9.-

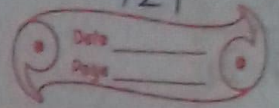
i)  $1332 = 1+3+3+2 = 9$  ✓

ans- 1332 and 4968

ii)  $53297 = 5+3+2+4+7 = 21$  ✗

iii) ~~4996~~  $4968 = 4+9+6+8 = 27$  ✗

iv)  $200314 = 2+3+1+4 = 10$  ✗



Q6) Find which of the following divisible by 6.

i)  $324 = 3+2+4 = 9 \checkmark$  ans = 9 324 and 2010

ii)  $2010 = 2+1 = 3 \checkmark$

iii)  $33278 = 3+3+2+7+8 = 23 \times$

iv)  $15505 = 1+5+5+5 = 16 \times$

Q7) Find which of the following nos are divisible by 5.

i) 5080  $\checkmark$  ans = 5080 and 755.

ii) 66666  $\times$

iii) 755  $\checkmark$

iv) 9207  $\times$

Q8) Find which of the following nos are divisible by 10.

i) 9990  $\checkmark$  ans = 9990 and 0

ii) 0  $\checkmark$

iii) 847

iv) 8976

## Divisibility Rules

[7] Remove the last digit double it, subtract it from ~~the~~ the left over. The result is divisible by 7.

[8] The no. represented by its last three digits is divisible by 8.

[11] Ex -  $\overset{\text{5th}}{\textcircled{2}} \overset{\text{4th}}{\textcircled{3}} \overset{\text{3rd}}{\textcircled{5}} \overset{\text{2nd}}{\textcircled{7}} \overset{\text{1st}}{\textcircled{9}}$

Sum of digits in <sup>odd</sup> ~~odd~~ <sub>even</sub> place

$$= 2 + 5 + 9 = \boxed{16}$$

Sum of digits in even place

$$= 3 + 7 = 10$$

Difference ~~bet~~ of the sum of addition and even

$$\text{place} = 16 - 10 = 6$$

$$\boxed{6 \div 11} \times$$

6 is not divisible by 11. So,  $23,579$  is not divisible by 11

Q. 68,717.

~~68717~~

Sum of digits in odd place

$$= 6 + 7 + 7 = \boxed{20}$$

Sum of digits in even place =  $8+1=9$

∴ Difference of the sum of the addition and even place =  $20-9=11$

∴ So, 11 is divisible by 11.

∴ 68717 is divisible by 11.

### Ex-9(c)

Q.8) Find which of the nos. are divisible by 8 =

i) 329 x

Ans = 2536, 92760, and

ii) 2536 ✓

444320.

iii) 92760 ✓

iv) 444320 ✓

Q.9) Find which of the following nos. are divisible by 11.

i) ~~5910 x~~

ii) ~~68717 ✓~~

i) 5918

~~5918~~

Sum of the digits in odd place = ~~5+1~~ = ~~6~~ 9+8 = 17

Sum of the digits in even place = ~~9+8~~ = ~~17~~ 5+1 = 6

Difference <sup>two sum</sup> Sum of the ~~digits~~ in both odd and even place =

$$17 - 6 = 11$$

∴ Because ~~23~~ 11 is not divisible by 11, so 5918 is not divisible by 11.

ii) 68717

68717

Sum of the digits in odd place = 6+7+7 = 20

Sum of the digits in even place = 8+1 = 9

Difference <sup>two sum</sup> Sum of the ~~digits~~ in both odd and even place = 20 - 9

$$= 11$$

∴ Because 11 is divisible by 11, so 68717 is divisible by 11.

iii) 3892

3882

Sum of the digits in odd place =  $8+2=10$ Sum of the digits in even place =  $3+8=11$ Difference of the <sup>two</sup> sums of odd and even place =  $11-10$ 

$\therefore$  Because 1 is ~~div~~ not divisible by 11, so 3882 is not divisible by 11.

iv) 10857

Sum of the digits in odd place =  $7+8+1=16$ Sum of the digits in even place =  $5+0=5$ Difference of the two sums of the odd and even place =  $16-5=11$ 

$\therefore$  ~~Because~~ Because 11 is divisible by 11, so 10857 is divisible by 11.

11. c) 64m3

$$= 6+4+m+3 = 13+m$$

$\therefore$  If m will be 2 then  $13+2=15$  which is divisible by 3. ~~Answer~~ = 6423

ii) ~~46~~ 46m46

$$= 4+6+m+4+6 = 20+m$$

∴ If  $m$  will be 1 then  $20+1=21$  which is divisible

by 3. No. = 46146

iii) 27~~6~~m53 =

$$= 2+7+m+5+3$$

$$= 17+m$$

∴ If  $m$  will be 1 then  $17+1=18$  which is divisible by 3.

No. = 27153

Q12) i) 76m91 =  $7+6+m+9+1 = 23+m$

If  $m$  will be 4 then  $23+4=27$  divisible by 9.

No. = 76491

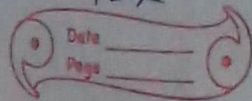
ii) 77598m =  $7+7+5+9+8+m = 31+m$

∴ If  $m$  will be 5 then  $31+5=36$  divisible by 9. No.

775985

iii) 627m9





$$= 6+2+7+m+9 = 24+m$$

If  $m$  will be 3 then  $24+3=27$  ~~is~~ divisible by 9.

(13) c)  $39m2$

Sum of digits in odd place =  $9+2=11$

Sum of digits in even place =  $3+m$

If  $m$  will be 8 then  $3+8=11$

~~11-11~~  $11-11=0$  divisible by 11

ii)  $3m422$

Sum of digits in odd place = ~~3~~  $2+4+3=9$

Sum of digits in even place =  $2+m$

If  $m$  will be 7 then  $2+7=9$

$9-9=0$  divisible by 11

iii)  $70975m$

Sum of the digits in odd place =  $m+7+0$

Sum of the digits in even place =  $5+9+7=21$

If  $m$  will be ~~3~~ then  $7+3=10$

$21-10=11$  divisible by 11.

Divisibility Rules.

15 A no. is divisible by 15 if it is divisible by 3 and 5 both

Ex - 9(0)

Q10) i) 960

$$9+6+0=15$$

So, it is divisible by 15 because it is divisible by 3 and 5.

ii) 8295

$$8+2+9+5=24$$

So, it is ~~not~~ divisible by 15 because its ~~last digit~~ <sup>unity place is not</sup> ~~is~~ divisible by 3 and 5.

iii) 10243

So, it is not divisible by 15 because the units place is not divisible by 5.

iv) 5013

∴ It is not divisible by 15 because it is not ~~divisible~~ divisible by 5.

Q14) i) If a no. is divisible by  $\frac{1}{4}$  it is divisible by 8.

F

ii) If a no. is a factor of 16 and 24, it is a factor of 48. T

iii) If a no. is divisible by 18, it is divisible by 3 and 6. T

iv) If a divides ~~both~~ both  $b$  and  $c$  completely, then  $a$  divides ~~(i)  $a+b$~~  (i)  $a+b$  (ii)  $a-b$  also completely. T