6/7/21

## Exercise - 9(C)

(1)

(2) Divisibility rule of 2

If unit digit is , 0, 2, 4, 6, 8 then it is divisible by 2.

(i) 352 · Unit digit is 2 so it divisible by 2.

(ii) 503 · Unit digit is 3 so its not divisible by 2.

(iii) 496 · Unit digit is 6 so its divisible by 2.

(iv) 619 · Unit digit is 9 so its not divisible by 2.

(3) Divisibility rule of 4

If any number's tens place and unit place divisible by 4. Then the number is divisible by 4.

(i) 222 ⇒ Tens and unit place is 22 · so Not divisible by 4. So 222 not divisible by 4.

(ii) 532 ⇒ Tens and unit place is 32, 32 is divisible by 4 so 532 is divisible by 4.

(iii) 678 ⇒ Tens and unit place is 78, 78 is not divisible by 4, so 678 is not divisible by 4.

(iv) 9232 ⇒ Tens and unit place is 32 and 32 is divisible by 4, so 9232 is divisible by 4.

(3) Divisibility rule of 8.

If any number forming number's hundred, tens and unit place divisible by 8 then the number is divisible by 8.

(i) 321 ⇒ Hundreds, tens and unit place is 321 which is not divisible by 8.

(II) 2536 ⇒ Hundreds, tens and unit place is 536 which is divisible by 8. So its divisible by 8.

(III) 92760 ⇒ Hundreds, tens and unit place is 760 which is divisible by 8. So its divisible by 8.

(IV) 444320 ⇒ Hundreds, tens and unit place is 320 which is divisible by 8. So its divisible by 8.

(4) Divisibility rule of 3

If the sum of the digit is divisible by 3, then the number is divisible by 3.

(I) 221 ⇒ Sum of ~~221=~~ digits 221 = 5. It's not divisible by 3.

(II) 543 ⇒ Sum of digits 543 = 12. It's divisible by 3.

(III) 28492 ⇒ Sum of digits 28492 = 25. It's not divisible by 3.

(IV) 92349 ⇒ Sum of digits 92349 = 27. It's divisible by 3.

(5) Divisibility rule of 9

If sum of the digits is divisible by 9, then its divisible by 9.

(I) 1332 ⇒ Sum of digits 1332 = 9. It's divisible by 9.

(II) 53247 ⇒ Sum of digits 53247 = 21. It's is not divisible by 9.

(III) 1968 ⇒ Sum of digits 1968 = 27. It's divisible by 9.

(IV) 200314 ⇒ Sum of digits 200314 = 10. It's not divisible by 9.

(6) Divisibility rule of 6

If the number is divisible with both 2 and 3, then its divisible by 6.

(i) 321 ⇒ Divisible by 2 and 3, so its divisible by 6.

(ii) 2010 ⇒ Divisible by 2 and 3, so its divisible by 6.

(iii) 33371 ⇒ Divisible by 2 but not with 3. So its not divisible by 6.

(iv) 55215 ⇒ Not divisible by 2 nor 3. So its not divisible by 6.

(7) Divisibly by 5

If the number's unit place have 0 or 5, then its divisible by 5.

(i) 5010 ⇒ Unit place is 0, its divisible by 5.

(ii) 66666 ⇒ Unit place does not have 0 or 5, its not divisible by 5.

(iii) 755 ⇒ Unit place is 5. Its divisible by 5.

(iv) 9907 ⇒ Unit place does not have 0 or 5. Its divisible by 5.

(8) Divisibility by 10

If the unit place is 0 then its divisible by 10.

(i) 9990 ⇒ Unit place is 0. Its divisible by 10.

(ii) 0 ⇒ Not possible

(iii) 847 ⇒ Unit place is not 0. Its not divisible by 10.

(iv) 8976 ⇒ Unit place is not 0 or 5 so not divisible by 0.

(9) Divisibility rule of 11

The difference of sum of its digits in odd places from the right side and the sum of its digits in even places from the right side.

(i) 5918 ⇒

Odd places number sum - 1+5 = 6

Even places number sum - 8+9 = 17

= 17 - 6 = 11 ⇒ Divisible by 11.

So, 5918 is divisible by 11.

(ii) 68717 ⇒

Odd places number sum - 7+7+6 = 20.

Even places number sum - 1+8 = 9.

20 - 9 = 11 ⇒ Divisible by 11.

So, 68717 is divisible by 11.

(iii) 3882 ⇒

Odd places number sum - 2+8 = 10

Even places number sum - 8+3 = 11

11 - 10 = 1 ⇒ Not divisible by 11.

So, 3882 is not divisble by 11.

(iv) 10857 ⇒

Odd places number sum - 7+8+1 = 16.

Even places number sum - 5+0 = 5.

16 - 5 = 11 ⇒ Divisible by 11.

So, 10857 is divisible by 11.

(10) Divisibility rule of 15.

If a number is divisible by both 3 and 5, then the number is divisible by 15.

(i) 960 ⇒ Divisible by 3 = 9+6+0 = 15.

Divisible by 5 = Unit digit is 0.

960 is divisible by both 3 and 5 ⇒ It is divisible by 15.

(ii) 8295 ⇒ Divisible by 3 = 8+2+9+5 = 24.

Divisible by 5 = Unit digit is 5.

8295 is divisible by both 3 and 5 ⇒ It is divisible by 15.

(iii) 10243 ⇒ Divisible by 3 = 1+0+2+4+3 = 10.

Divisible by 5 = Unit digit is 3.

10243 is not divisible by 3 nor 5 ⇒ It is not divisible by 15.

(iv) 5013 ⇒ Divisible by 3 = 5+0+1+3 = 9

Divisible by 5 = Unit digit is 3.

5013 is divisible by 3 but not by 5 ⇒ It is not divisible by 15.

(11) Divisibility rule of 3.

If sum of the number is divisible by 3 then the number is divisible by 3.

(i) 64M3 ⇒ 6+4+M+3 = 13+M

13+M = divisible by 3 ⇒ 13+2

M is replaced by 2.

The number is 6423.

(ii) 46M46 ⇒ 4+6+M+4+6 = 20+M

20+M = divisible by 3 ⇒ 20+1.

M is replaced by 1 and the number is 46146.

(11) 27M53 = 2+7+M+5+3 = 17+M

17+M = divisible by 3 ⇒ 17+1.

M is replaced by 1 and the number is 27153.

(12) Divisibility rule of 9.

If the sum of the number is divisible by 3 then the number is divisible by 3.

(i) 79M91 = 7+9+M+9+1 = 26+M

26+M = divisible by 9 ⇒ 26+1.

M is replaced by 1 and the number is 79191.

(ii) 77548M = 7+7+5+4+8+M = 31+M

31+M = divisible by 9 ⇒ 31+5.

M is replaced by 5 and the number is 775485.

(iii) 627M9 = 6+2+7+M+9 = 24+M

24+M = divisible by 9 ⇒ 24+3.

M is replaced by 3 and the number is 62739.

(13) Divisibility rule of 11.

A number is divisible by 11, if the difference of sum of its digits in odd places from the right side and sum of its digits in even place from the right side.

(i) 76M91 =

Odd place sum = 1+M+7 = 8+M

Even place sum = 9+6 = 15

(8+M) − 15 = divisible by 11.

8 8+M

(i) 39M2 =

Odd place sum = 2+9 = 11

Even place sum = 3+M =

(11) - (3+M) => Divisible by 11.

11 - 11 => 0 Divisible by 11.

3+M = 11 => M = 11 - 3 = 8

M is replaced by 8 and the number is 3982.

(ii) 3M422 =

Odd place sum = 2+4+3 = 9.

Even place sum = 2+M =

(9) - (2+M) => Divisible by 11.

(9) - (2+M) = 0

M = 7

M is replaced by 7 and the number is 37422.

(iii) 70975M =

Odd place sum = M+7+0 = 7+M

Even place sum = 5+9+7 = 21.

(21) - (7+M) => 0 => Divisible by 11.

(21) - (7+M) = 0

21 - 7 - M = 11

21 - 7 - 3 = 11

M = 3

M is replaced by 3 and the number is 709753.

(iv) 4M75 =

Odd place sum = 5 + M + 4 = 9 + M

Even place sum = 7 + 4 = 11

(11) - (9+M) = Divisible by 11 (0 divisible by 11)

(11) - (9+M) = 0

11 - 9 - M = 0

M = 2

M is replaced by 5 and the number is 14575

(14)

(i) False

(ii) True

(iii) True

(iv) True