Ex - 9(c)

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

(i) 352

Digit at units place = 2
Therefore it is divisible by 2.

(ii) 523

Digit at units place = 3
Therefore it is not divisible by 2.

(iii) 496

Digit at units place = 6
Therefore, it is divisible by 2.

(iv) 649

Digit at units place = 9
Therefore, it is not divisible by 2.

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

(i) 222

The number formed by tens and units digits is 22, which is not divisible by 4.
Therefore 222 is not divisible by 4.

(ii) 532

The number formed by tens and units digit is 32, which is divisible by 4.
Therefore, 532 is divisible by 4.

(iii) 678

The number formed by tens and units digit is 78 which is not divisible by 4.
Therefore 678 is not divisible by 4.

(iv) 9232.
The number formed by tens and units digit is 32 which is divisible by 4.
Therefore 9232 is divisible by 4.

6.7.21

3. Find which of the following numbers are divisible by 8.

(i) 324
The number formed by hundreds, tens and units digit is 324, which is not divisible by 8.
Therefore 324 is not divisible by 8.

(ii) 2536
The number formed by hundreds, tens and units digit is 536, which is divisible by 8.
Therefore 2536 is divisible by 8.

(iii) 92760
The number formed by hundreds, tens and units digit is 760 which is divisible by 8.
Therefore 92760 is divisible by 8.

(iv) 444320
The number formed by hundreds, tens and units digit is 320 which is divisible by 8.
Therefore 444320 is divisible by 8.

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

(i) 221

The Sum of its digits is not divisible by 3.
Therefore 221 is not divisible by 3.

(ii) 543

The Sum of its digits is divisible by 3.
Therefore 543 is divisible by 3.

(iii) 28492

The Sum of its digits is not divisible by 3.
Therefore 28492 is not divisible by 3.

(iv) 92349

The Sum of its digits is divisible by 3.
Therefore 92349 is divisible by 3.

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

(i) 1332

The Sum of its digits is divisible by 9.
Therefore 1332 is divisible by 9.

(ii) 53247

The Sum of its digits is not divisible by 9.
Therefore 53247 is not divisible by 9.

(iii) 4968

The Sum of its digits is divisible by 9.

Therefore 4968 is not divisible by 9.

(iv) 200314

The sum of its digits is not divisible by 9. Therefore 200314 is not divisible by 9.

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

(i) 324

The number is both divisible by 2 and 3, so it is divisible by 6.

(ii) 2010

The number is both divisible by 2 and 3, so it is divisible by 6.

(iii) 33278

The number is divisible by 2 but not 3, so it is not divisible by 6.

(iv) 15505

The number is neither divisible by 2 nor 3, so it is not divisible by 6.

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

(i) 5080

The unit's digit is 0, so it is divisible by 5.

(ii) 66666

The unit's digit is neither 0 nor 5, so it is not divisible by 5.

(iii) 755

The unit's digit is 5, so it is divisible by 5.

(iv) 9207

The unit's digit is 7, so it is not divisible by 5.

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

(i) 9990

The unit's place is 0, therefore 9990 is divisible by 10.

(ii) 0

It is divisible by 10.

(iii) 847

The unit's place is 7, therefore 847 is not divisible by 10.

(iv) 8976

The unit's place is 6, therefore 8976 is not divisible by 10.

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

(i) 5918

Sum of digits at odd places = 5 + 1 = 6
Sum of digits at even places = 9 + 8 = 17
Their difference = 17 – 6

$$= 11$$

11 is divisible by 11, therefore 5918 is also divisible by 11.

(ii) 68,717

Sum of digits at odd places = 6 + 7 + 7 = 20
Sum of digits at even places = 8 + 1 = 9
Difference = 20 – 9

$$= 11$$

11 is divisible by 11, therefore 68717 is also divisible by 11.

(iii) 3882

Sum of digits at odd places = 3 + 8 = 11
Sum of digits at even places = 8 + 2 = 10
Difference = 11 – 10

$$= 1$$

1 is not divisible by 11, therefore 3882 is not divisible by 11.

(iv) 10857

Sum of digits at odd places = 1 + 8 + 7 = 16
Sum of digits at even places = 0 + 5 = 5
Difference = 16 – 5

$$= 11$$

11 is divisible by 11, therefore 10857 is divisible by 11.

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

(i) 960

The number is both divisible by 3 and 5, so it is divisible by 15.

(ii) 8295

The number is both divisible by 3 and 5, so it is divisible by 15.

(iii) 10243

The number is neither divisible by 3 nor 5, therefore it is not divisible by 15.

(iv) 5013

The number is divisible by 3 but not 5, so it is not divisible by 15.

11. In each of the following numbers, replace M by the smallest whole number to make the resulting number divisible by 3 :

(i) 64 M 3

Sum of its digits = 6 + 4 + 3 = 13
The number next to 13 which is divisible by 3 is 15.

  Required smallest number = 15 − 13 = 2

(ii) 46 M 46

Sum of its digits = 4 + 6 + 4 + 6 = 20
The number next to 20 which is divisible

by 3 is 21.

$$20 + M = 21$$
$$M = 21 - 20 = 1$$

(iii) 27 M 53

Sum of its digits $= 2 + 7 + 5 + 3 = 17$

The number next to 17 which is divisible by 3 is 18.

$$17 + M = 18$$
$$M = 18 - 17 = 1$$

12. In each of the following numbers, replace M by the smallest whole number to make the resulting number divisible by 9.

(i) 76 M 91

Sum of its digits $= 7 + 6 + 9 + 1 = 23$

The number next to 23, which is divisible by 9 is 27.

$$23 + M = 27$$
$$M = 27 - 23 = 4.$$

(ii) 77548 M

Sum of its digits $= 7 + 7 + 5 + 4 + 8 = 31$

The number next to 31 which is divisible by 9 is 36.

$$31 + M = 36$$
$$M = 36 - 31 = 5.$$

(iii) 627 M 9

Sum of its digits $= 6 + 2 + 7 + 9 = 24$

The number next to 24 which is divisible by 9 is 27

$24 + M = 27$
$M = 27 - 24 = 3$

13. In each of the following numbers, replace M by the Smallest whole number to make the resulting number divisible by 11.

(i) 39 M 2
Sum of its digits in odd places $= 3 + M$
Sum of its digits in even places $= 9 + 2 = 11$
Their difference $= 11 - (3 - M)$ ~~00000~~
$= 11 - 3 - M$ ~~0000~~
$= M = 8$

(ii) 3·M 422
Sum of its digits in odd places $= 3 + 4 + 2 = 9$
Sum of its digits in even places $= M + 2$
Their difference $= 9 - (2 + M)$
$= 9 - 2 + M$
$= M = 7$

(iii) 70975 M
Sum of its digits in odd places $= 7 + 9 + 5 = 21$
Sum of its digits in even places $= 0 + 7 + M = 7 + M$
Their difference $= 21 - (7 + M)$
$= 21 - 7 + M$
$= M = 14$

(iv) 14 M 75
Sum of its digits in odd places $= 1 + M + 5 = 6 + M$
Sum of its digits in even places $= 4 + 7 = 11$
Their difference $= 11 - (6 + M) = 11 - 6 + M$
$M = 5$

14. True or False :-

i) If a number is divisible by 4, it is divisible by 8.
<u>False</u>

If tens and unit digit of a number is divisible by 4 then it is divisible by 4.

If hundred's, tens and unit digit is divisible by 8, then number is divisible by 8.

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

Because 16 and 24 are factors of 48.

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

Because 18 is the product of 3 and 6 so if a number is divisible by 18, it is divisible by 3 and 6.

iv) If a divides both b and c completely, then a divides (i) a+b (ii) a-b also completely. <u>True</u>

If a divides b and c completely, then a divides a+b and a-b completely, because, if a number is a factor of each of the two number, then it is a factor of their sum also.