RS Aggrwaal classs 8 solutions chapter 5 Playing With Numbers 5B

Q1

Answer :

A number is divisible by 2 only when its unit digit is 0, 2, 4, 6 or 8.
Therefore, the following numbers are divisible by 2:

(ii) 192

(iii) 720

(v) 2398

(vi) 179832

(vii) 468230

(ix) 379514

Q2

Answer :

A number is divisible by 5 only when its unit digit is either 0 or 5.
Therefore, the following numbers are divisible by 5:

(ii) 95

(iii) 270

(v) 1065

(vi) 5739210

(viii) 876945

Q3

Answer :

A number is divisible by 10 only if the digit in the units place is 0.
Therefore, the following numbers are divisible by 10:

(ii) 90

(vii) 3759210

Q4

Answer :

A number is divisible by 3 only if the sum of its digits is divisible by 3.

(i) 83

Sum of its digits = 8 + 3 = 11

11 is not divisible by 3.

So, 83 is not divisible by 3

(ii) 78

Sum of its digits = 7 + 8 = 15

15 is divisible by 3.

So, 78 is divisible by 3.

(iii) 474

Sum of its digits = 4+7+4 = 15

15 is divisible by 3.

So, 474 is divisible by 3.

(iv) 1693

Sum of its digits = 1+6+9+3 = 19

19 is not divisible by 3.

So, 1693 is not divisible by 3.

(v) 267144

Sum of its digits = 2+6+7+1+4+4=24

24 is divisible by 3.

So, 267144 is divisible by 3.

(vi) 372416

Sum of its digits = 3+7+2+4+1+6=23

23 is not divisible by 3.

So, 372416 is not divisible by 3.

(vii) 1248965

Sum of its digits = 1+2+4+8+9+6+5=35

35 is not divisible by 3.

So, 1248965 is not divisible by 3.

(viii) 9412503

Sum of its digits = 9+4+1+2+5+0+3=24

24 is divisible by 3.

So, 9412503 is divisible by 3.

Q5

Answer :

A number is divisible by 9, only when the sum of its digits is divisible by 9.

S. No.	Number	Sum of the digits	Divisible?
(i)	91	10	No
(ii)	306	9	Yes
(iii)	1526	14	No
(iv)	730143	18	Yes
(v)	568711	28	No
(vi)	862497	36	Yes
(vii)	966333	30	No
(viii)	1257777	36	Yes

Q6

Answer :

For a number to be divisible by 3, the sum of the digits must be divisible by 3.

$$\begin{aligned}\textbf{Sum of the digits} &= 7 + x + 3 \\ &= 10 + x\end{aligned}$$

$10 + x$ will be divisible by 3 in the following cases:

$10 + x = 12$, *or* $x = 2$

Thus, the number will be 723.

$10 + x = 15$, *or* $x = 5$

Thus, the number will be 753.

$10 + x = 18$, *or* $x = 8$

Thus, the number will be 783.

So, the numbers can be 723, 753 or 783.

Q7

Answer :

If a number is divisible by 3, then the sum of the digits is also divisible by 3.

Sum of the digits = $5 + 3 + y + 1 = 9 + y$

The sum of the digits is divisible by 3 in the following cases:

$9 + y = 9$, *or* $y = 0$
Then the number is 5301.
$9 + y = 12$, *or* $y = 3$
Then the number is 5331.
$9 + y = 15$, *or* $y = 6$
Then the number is 5361.
$9 + y = 18$, *or* $y = 9$
Then the number is 5391.

∴ y = 0, 3, 6 or 9
The possible numbers are 5301, 5331, 5361 and 5391.

Q8
Answer :

For a number to be divisible by 9, the sum of the digits must be divisible by 9.

Sum of the digits in the given number = $x + 8 + 0 + 6 = x + 14$

The sum of the digits is divisible by 9, only in the following case:

$x = 4$
or
$x + 14 = 18$

Thus, the number x806 is divisible by 9 if x is equal to 4.

The number is 4806.

Q9
Answer :

If a number is divisible by 9, then the sum of the digits is also divisible by 9.

Sum of the digits of the given number = $4 + 7 + 1 + z + 8 = 20 + z$

$20 + z = 27$, *for* $z = 7$

27 is divisible by 9.

Therefore, 471z8 is divisible by 9 if z is equal to 7.

The number is 47178.

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