

Playing With Numbers Ex 5.2 Q1

Answer:

It is given that $\overline{35a64}$ is a multiple of 3.

$$\therefore$$
 $(3+5+a+6+4)$ is a multiple of 3.

$$\therefore$$
 $(a+18)$ is a multiple of 3.

$$\therefore (a+18) = 0, 3, 6, 9, 12, 15, 18, 21...$$

But a is a digit of number $\overline{35a64}$. So, a can take value 0, 1, 2, 3, 4...9.

$$a + 18 = 18 \Rightarrow a = 0$$

$$a + 18 = 21 \Rightarrow a = 3$$

$$a + 18 = 24 \Rightarrow a = 6$$

$$a+18=27 \ \Rightarrow \mathbf{a}=9$$

$$\therefore a = 0, 3, 6, 9$$

Playing With Numbers Ex 5.2 Q2

Answer:

It is given that $\overline{18x71}$ is a multiple of 3.

$$\therefore$$
 $(1+8+x+7+1)$ is a multiple of 3.

$$\therefore (17+x)$$
 is a multiple of 3.

$$\therefore 17 + x = 0, 3, 6, 9, 12, 15, 18, 21...$$

But x is a digit. So, x can take values 0, 1, 2, 3, 4...9.

$$17 + x = 18 \Rightarrow x = 1$$

$$17 + x = 21 \implies x = 4$$

$$17 + x = 24 \Rightarrow x = 7$$

$$x = 1, 4, 7$$

Playing With Numbers Ex 5.2 Q3

Answer:

It is given that 66784x is a multiple of 9.

Therefore,
$$(6+6+7+8+4+x)$$
 is a multiple of 9.

And,

$$(31 + x)$$
 is a multiple of 9.

Possible values of (31 + x) are 0, 9, 18, 27, 36, 45,...

But x is a digit. So, x can only take value $0, 1, 2, 3, 4, \dots 9$.

$$\therefore 31 + x = 36$$

$$\Rightarrow$$
 x = 36 - 31

$$\Rightarrow x = 5$$

Playing With Numbers Ex 5.2 Q4

Answer:

It is given that $\overline{67y19}$ is a multiple of 9. $\therefore \left(6+7+y+1+9\right) \text{ is a multiple of 9.}$ $\therefore \left(23+y\right) \text{ is a multiple of 9.}$ $23+y=0,\ 9,\ 18,\ 27,\ 36\dots$ But x is a digit. So, x can take values $0,1,2,3,4\dots 9$. 23+y=27 $\Rightarrow y=4$

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