

③  $24x$  is a multiple of 3  
 $\therefore 2+4+x$  is divisible by 3

or  $6+x = 3, 6, 9, 12, 15, 18, 21$  etc

$$6+x=3 \quad | \quad 6+x=6 \quad | \quad 6+x=9 \quad | \quad x+6=12$$

$$\Rightarrow x=-3 \quad | \quad \Rightarrow x=0 \quad | \quad \Rightarrow x=3 \quad | \quad \Rightarrow x=6$$

$$x+6=15 \quad | \quad x+6=18$$

$$\Rightarrow x=9 \quad | \quad \Rightarrow x=12$$

$\therefore x = 0, 3, 6, 9$  [ $\because x$  is a digit]

④  $31z5$  is a multiple of 3  
 $\therefore 3+1+z+5$  is divisible by 3

or  $9+z = 3, 6, 9, 12, 15, 18, \dots$

$$9+z=3 \quad | \quad 9+z=6 \quad | \quad 9+z=9 \quad | \quad z+9=12$$

$$\Rightarrow z=-6 \quad | \quad \Rightarrow z=-3 \quad | \quad \Rightarrow z=0 \quad | \quad \Rightarrow z=3$$

$$9+z=15 \quad | \quad 9+z=18 \quad | \quad 9+z=21$$

$$\Rightarrow z=6 \quad | \quad \Rightarrow z=9 \quad | \quad z=12$$

$\therefore z = 0, 3, 6, 9$  [ $\because z$  is a digit]