ODM EDUCATIONAL GROUP
Changing your Tomorrow

PLAYING WITH NUMBERS

PERIOD 3

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 5
CHAPTER NAME : PLAYING WITH NUMBERS

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

Learning outcome

Cryptarithm sharpens the ability to find solutions to problems

Previous knowledge:

4) **If a = b, show that abc = bac.**

Sol: abc = 100a + 10b +c = 100a +10a + c= 110a + c (using a = b)

bac = 100b + 10a + c = 100a +10a + c= 110a +c (using a = b)

Hence, abc = bac

6) Show that 527 + 752 + 275 is exactly divisible by 14.

Property :

abc = 100a + 106 + c .....(i)

bca = 1006 + 10c + a .....(ii)

and cab = 100c + 10a + b .....(iii)

Adding, (i), (ii) and (iii), we get

abc + bca + cab = 111a + 111b + 111c = 111(a + b + c) = 3 × 37(a + b + c)

Now, let us try this method on

527 + 752 + 275 to check is it exactly divisible by 14

Here, a = 5, 6 = 2, c = 7

527 + 752 + 275 = 3 × 37(5 + 2 + 7) = 3 x 37 x 14

Hence, it shows that 527 + 752 + 275 is exactly divisible by 14

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Exercise-5(B)

1)

$$\begin{array}{r} 3\,A \\ +\,2\,5 \\ \hline B\,2 \end{array}$$

A = 7 as 7 + 5 = 12. We want 2 at units place and 1 is carry over. Now 3 + 2 + 1 = 6.

B = 6

Hence A = 7 and B = 6

$$\begin{array}{r} 3\,7 \\ +\,2\,5 \\ \hline 6\,2 \end{array}$$

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Exercise-5(B)

2)

$$\begin{array}{r} 9\,8 \\ +\,4\,A \\ \hline C\,B\,3 \end{array}$$

A = 5 as 8 + 5 = 13. We want 3 at units place and 1 is carry over. Now 9 + 4 + 1 = 14.

B = 4 and C = 1

Hence A = 5 and B = 4 and C = 1

$$\begin{array}{r} 9\,8 \\ +\,4\,5 \\ \hline 1\,4\,3 \end{array}$$

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Exercise-5(B)

6)

$$\begin{array}{r} 1\,A \\ \times\, A \\ \hline 9\,A \end{array}$$

As we need A at unit place and 9 at ten's place,

A = 6 as 6 x 6 = 36

$$\begin{array}{r} 1\,6 \\ \times\, 6 \\ \hline 9\,6 \end{array}$$

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Exercise-5(B)

11)

$$\begin{array}{r} 6AB5 \\ +D58C \\ \hline 9351 \end{array}$$

$C + 5 = 11$

$\therefore\ C = 11 - 5 = 6$

and $8 + B + 1 = 15$

$\therefore\ B = 15 - 9 = 6$

and $A + 5 + 1 = 13$

$\therefore\ A = 13 - 6 = 7$

and $6 + D + 1 = 9$

$\therefore\ D = 9 - 7 = 2$

Hence $A = 7$, $B = 6$, $C = 6$ and $D = 2$

$$\begin{array}{r} 6765 \\ +2586 \\ \hline 9351 \end{array}$$

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Home assignment

Exercise 5(B)

AHA

1.

$$\begin{array}{r} A\ \ B \\ \times\ \ 6 \\ \hline C\ 6\ 8 \\ \hline \end{array}$$

2.

$$\begin{array}{r} A\ \ A \\ \times\ \ A \\ \hline C\ A\ B \\ \hline \end{array} \quad \text{and } B - A = 1$$

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THANKING YOU

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