

Chapter 16 - Playing With Numbers

Exercise 16.1

Question 1:

Find the values of the letters in the following and give reasons for the steps involved.

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

Answer 1:

On putting $A = 1, 2, 3, 4, 5, 6, 7$ and so on and we get,

$7 + 5 = 12$ in which ones place is 2.

$\therefore A = 7$

And putting 2 and carry over 1, we get

$B = 6$

Hence, $A = 7$ and $B = 6$

Question 2:

Find the values of the letters in the following and give reasons for the steps involved.

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

Answer 2:

On putting $A = 1, 2, 3, 4, 5, 6, 7$ and so on and we get,

$8 + 5 = 13$ in which ones place is 3.

$\therefore A = 5$

And putting 3 and carry over 1, we get

$B = 4$ and $C = 1$

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

Question 3:

Find the values of the letters in the following and give reasons for the steps involved.

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

Answer 3:

On putting $A = 1, 2, 3, 4, 5, 6, 7$ and so on and we get,

$A \times A = 6 \times 6 = 36$ in which ones place is 6.

$\therefore A = 6$

Hence, $A = 6$

Question 4:

Find the values of the letters in the following and give reasons for the steps involved.

$$\begin{array}{r} A \ B \\ + \ 3 \ 7 \\ \hline 6 \ A \\ \hline \end{array}$$

Answer 4:

Here, we observe that $B = 5$ so that $7 + 5 = 12$.

Putting 2 at ones place and carry over 1 and $A = 2$, we get

$$2 + 3 + 1 = 6$$

Hence, $A = 2$ and $B = 5$

Question 5:

Find the values of the letters in the following and give reasons for the steps involved.

$$\begin{array}{r} A \ B \\ \times \ 3 \\ \hline C \ A \ B \\ \hline \end{array}$$

Answer 5:

Here on putting $B = 0$, we get $0 \times 3 = 0$.

And $A = 5$, then $5 \times 3 = 15$

$$\Rightarrow A = 5 \text{ and } C = 1$$

Hence, $A = 5$, $B = 0$ and $C = 1$

Question 6:

Find the values of the letters in the following and give reasons for the steps involved.

$$\begin{array}{r} A \ B \\ \times \ 5 \\ \hline C \ A \ B \\ \hline \end{array}$$

Answer 6:

On putting $B = 0$, we get

$0 \times 5 = 0$ and $A = 5$, then $5 \times 5 = 25$

$$\Rightarrow A = 5, C = 2$$

Hence, $A = 5$, $B = 0$ and $C = 2$

Question 7:

Find the values of the letters in the following and give reasons for the steps involved.

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

Answer 7:

Here product of B and 6 must be same as ones place digit as B.

$$6 \times 1 = 6, 6 \times 2 = 12, 6 \times 3 = 18, 6 \times 4 = 24$$

On putting $B = 4$, we get the ones digit 4 and remaining two B's value should be 44.

$$\therefore \text{ For } 6 \times 7 = 42 + 2 = 44$$

Hence, $A = 7$ and $B = 4$

Question 8:

Find the values of the letters in the following and give reasons for the steps involved.

$$\begin{array}{r} A \ 1 \\ + \ 1 \ B \\ \hline B \ 0 \end{array}$$

Answer 8:

On putting $B = 9$, we get $9 + 1 = 10$

Putting 0 at ones place and carry over 1, we get

For $A = 7$

$$\Rightarrow 7 + 1 + 1 = 9$$

Hence, $A = 7$ and $B = 9$

Question 9:

Find the values of the letters in the following and give reasons for the steps involved.

$$\begin{array}{r} 2 \ A \ B \\ + \ A \ B \ 1 \\ \hline B \ 1 \ 8 \end{array}$$

Answer 9:

On putting $B = 7$,

$$\Rightarrow 7 + 1 = 8$$

Now $A = 4$, then $4 + 7 = 11$

Putting 1 at tens place and carry over 1, we get

$$2 + 4 + 1 = 7$$

Hence, $A = 4$ and $B = 7$

Question 10:

Find the values of the letters in the following and give reasons for the steps involved.

$$\begin{array}{r} 1 \ 2 \ A \\ + \ 6 \ A \ B \\ \hline A \ 0 \ 9 \\ \hline \end{array}$$

Answer 10:

Putting $A = 8$ and $B = 1$, we get

$$8 + 1 = 9$$

Now again we add $2 + 8 = 10$

Tens place digit is '0' and carry over 1.

$$\text{Now } 1 + 6 + 1 = 8 = A$$

Hence, $A = 8$ and $B = 1$