

Chapter 15: Playing with Numbers

- 1) Find the least value that must be given to number a so that the number $91876a2$ is divisible by 8.

2) If $\begin{array}{r} 1\ P \\ \times\ P \\ \hline Q\ 6 \end{array}$ where $Q - P = 3$, then find the values of P and Q .

- 3) If $1AB + CCA = 697$ and there is no carry-over in addition, find the value of $A + B + C$.

- 4) A five-digit number $AABAA$ is divisible by 33. Write all the numbers of this form.

- 5) Find the value of the letters in each of the following questions.

$$\begin{array}{r} A\ A \\ +A\ A \\ \hline XA\ Z \end{array}$$

6)
$$\begin{array}{r} 8\ 5 \\ +4\ A \\ \hline B\ C\ 3 \end{array}$$

51.
$$\begin{array}{r} B\ 6 \\ +8\ A \\ \hline C\ A\ 2 \end{array}$$

52.
$$\begin{array}{r} 1\ BA \\ +\ A\ BA \\ \hline 8\ A\ 2 \end{array}$$

7)
$$\begin{array}{r} C\ BA \\ +C\ BA \\ \hline 1\ A\ 3\ 0 \end{array}$$

54.
$$\begin{array}{r} B\ AA \\ +B\ AA \\ \hline 3\ A\ 8 \end{array}$$

55.
$$\begin{array}{r} A\ 0\ 1\ B \\ +1\ 0\ AB \\ \hline B\ 1\ 0\ 8 \end{array}$$

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

57.
$$\begin{array}{r} A\ B \\ \times\ AB \\ \hline 6\ A\ B \end{array}$$

58.
$$\begin{array}{r} A\ A \\ \times\ A \\ \hline C\ A\ B \end{array}$$

- 9) and $B - A = 1$
If $2A7 + A = 33$,
then find the

59.
$$\begin{array}{r} A\ B \\ -\ B\ 7 \\ \hline 4\ 5 \end{array}$$

60.
$$\begin{array}{r} 8\ ABC \\ -\ ABC\ 5 \\ \hline D\ 4\ 8\ 8 \end{array}$$

value of A.

- 10) 212×5 is a multiple of 3 and 11. Find the value of x .
- 11) Find the value of k where $31k2$ is divisible by 6.
- 12) $1y3y6$ is divisible by 11. Find the value of y .
- 13) $756x$ is a multiple of 11, find the value of x .
- 14) A three-digit number $2a3$ is added to the number 326 to give a three-digit number $5b9$ which is divisible by 9. Find the value of $b - a$.
- 15) Let $E = 3$, $B = 7$ and $A = 4$. Find the other digits in the sum

$$\begin{array}{r} B A S E \\ + B A L L \\ \hline G A M E S \end{array}$$

- 16) Let $D = 3$, $L = 7$ and $A = 8$. Find the other digits in the sum

$$\begin{array}{r} M A D \\ + A S \\ + A \\ \hline B U L L \end{array}$$

- 17) If from a two-digit number, we subtract the number formed by reversing its digits then the result so obtained is a perfect cube. How many such numbers are possible? Write all of them.
- 18) Work out the following multiplication.

$$\begin{array}{r} 12345679 \\ \times 9 \\ \hline \end{array}$$

Use the result to answer the following questions.

- (a) What will be 12345679×45 ?
- (b) What will be 12345679×63 ?

- (c) By what number should 12345679 be multiplied to get 888888888?
- (d) By what number should 12345679 be multiplied to get 999999999?

- 19) Find the value of the letters in each of the following:

$$\begin{array}{r} (i) \quad P Q \\ \times 6 \\ \hline Q Q Q \end{array}$$

$$\begin{array}{r} (ii) \quad 2 L M \\ + L M 1 \\ \hline M 1 8 \end{array}$$

- 20) If 148101B095 is divisible by 33, find the value of B.
- 21) If 123123A4 is divisible by 11, find the value of A.
- 22) If $56x32y$ is divisible by 18, find the least value of y .