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4) Solve the crypt - arithmetic Problem using following input and output.

$$K\ A\ N\ S\ A\ S$$
$$+\qquad O\ H\ I\ O$$
$$\overline{O\ R\ E\ G\ O\ N}$$

⇒ Then find the value of
$$G + R + O + S + S$$
(the value of $O = 5$).

Solution:

$$K\ A\ N\ S\ A\ S$$
$$+\qquad (5)\ H\ I\ (5)$$
$$\overline{(5)\ R\ E\ G\ O\ N}$$

Code	char
0	R
1	G
2	S
3	E
4	K
5	O
6	I
7	N
8	H
9	A

⇒ $K + 1 = 5$ $\boxed{O = 5}$

$4 + 1 = 5$ $\boxed{K = 4}$

⇒ $A + 1 = R$ $\boxed{A = 9}$

$9 + 1 = {}^{1}10$ $\boxed{R = 0}$

⇒ $(4)\ (9)\ N\ S\ (9)\ S$
$$\qquad (5)\ H\ I\ (5)$$
$$\overline{(5)\ (0)\ E\ G\ (5)\ N}$$

⇒ $9 + I = 15$ $\boxed{I = 6}$

$9 + 6 = 15$

$\Rightarrow$ S + 5 = N

The value of S = 1, 2, 3, 4

1 + 5 = 6 $\rightarrow$ '6' is already assumed.

4 + 5 = 9 $\rightarrow$ '9' is already assumed.

The value of 'S' is must be 2, 3;

$\Rightarrow \overset{(3)}{2} + 5 = 7 (N)$

$\Rightarrow$ 7 + 5 = E

7 + 5 = 12 $\Rightarrow$ Here 2 is already assumed

$\Rightarrow$ 2 + H = G

1 + 2 + 8 = 11 (1)

$\Rightarrow$ 1 + 2 + 5 = 7;

$\Rightarrow$ 1 + 2 + 8 = 11;

$\therefore$ $\boxed{N = 7}$; $\boxed{G = 1}$; $\boxed{H = 8}$; $\boxed{S = 2}$; $\boxed{E = 3}$;

$\Rightarrow$ G + R + O + S + S = 1 + O + 5 + 2 + 2

$\boxed{\Rightarrow 10}$