

# AIML - Assignment - 2.

1.  $B \ A \ 15 \ E \ 2 \ 1$   
 $B(1, A) \text{ and } L(2)$

$G: A \in M \in S$

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

\* There's a carry over here

so  $G = 1$

$S + L = E$  (or)  $10 + E$

$E + L = S$  (or)  $10 + S$

Now,  $E + L = 10 + S$

substitute  $E = S + L$

$S + L + L = 10 + S$   
 combination we

$2L = 10$

have are:

$L = 5$

$S \ E$

$E + L = S$

$(5, 10) \times$

$E + 5 = S$

$(6, 1) \times$

$E = S - 5$

$(7, 12) \times$

$(8, 3) \times$

$(9, 4)$



\* In the above combinations we know already  $L=5, G=1$

We can remove  $(5,0)$  and  $(6,1)$

since the difference b/w  $B$  &  $E$  is 5.

since we have a carry.

$$2B = A + 10$$

$$2B \geq 10$$

$$B > 5$$

5 is already assigned to 'L' so 'B' is greater than 5.

combination B can be either 6, 7, 8, 9

Let's take

$$B=6, S=(7,2)$$

$$\begin{matrix} 6 & 2 & 7 \\ B & A & S \end{matrix} \quad E$$

$$\begin{matrix} 6 & 2 & 5 \\ B & A & L \end{matrix} \quad L$$

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$$G^1 A^2 M^4 E^2 S$$

Both A and E can't be same no.

Now let's take another combination



|                |                |                |                |
|----------------|----------------|----------------|----------------|
| 7              | 4              | 8              | 3              |
| B              | A              | S              | E              |
| B <sup>7</sup> | A <sup>4</sup> | S <sup>8</sup> | E <sup>3</sup> |

$$B=7, S=(8,3)$$

|   |   |   |   |   |
|---|---|---|---|---|
| G | A | M | E | S |
| 1 | 4 | 9 | 3 | 8 |

2. variables:  $X = \{NA, NT, G, NSW, V, SA, T\}$

Domains:  $D_i = \{\text{red, green, blue}\}$

constraints: adjacent regions must have different colours.

$NA = \text{red}, NT = \text{green}, G = \text{red}$

$NSW = \text{green}, V = \text{red}, SA = \text{blue}, T = \text{red}$

