



# AUSTRALIAN MATHS TRUST

## Maths Challenge Middle Primary: Years 3–4 Practice Problem

### MP1: Club Code

## Solutions

- a** The only three numbers that add to 6 are 1, 2, 3. So  $E, U, L$  stand for 1, 2, 3 in some order. 1
- b Alternative i**  
From Part **a**, the letters  $E, U, L$  stand for 1, 2, 3 in some order. Therefore the letters  $S, R, T$  stand for 4, 5, 6 in some order. Therefore  $S + R + T = 15$ . Hence  $U = 3$ . 1
- Alternative ii**  
The only four numbers that add to 18 are 3, 4, 5, 6. From Part **a**,  $U = 1, 2$ , or 3. Hence  $U = 3$  and  $S + R + T = 15$ . 1
- Alternative iii**  
The six letters  $E, L, R, S, T, U$  stand for the six numbers 1, 2, 3, 4, 5, 6 in some order. Therefore  $E + L + R + S + T + U = 21$ . We are told that  $E + U + L = 6$  and  $S + R + U + T = 18$ . Therefore  $E + L + R + S + T + U + U = 6 + 18 = 24$ . Hence  $U = 24 - 21 = 3$  and  $S + R + T = 18 - 3 = 15$ . 1
- c** We have  $U \times T = 15$  and  $U = 3$ . So  $T = 5$ . 1
- d** From Part **b**,  $S = 4, 5$ , or 6. Since  $S \times L = 8$ ,  $S = 4$ . Hence  $L = 2$ . From Part **a**,  $E, U, L$  are 1, 2, 3 in some order. Since  $U = 3$  and  $L = 2$ , we must have  $E = 1$ . Hence  $R = 6$  and the code word is *RESULT*. 1

### Discussion

1. This problem is a modification of one proposed by Lorraine Motterhead.
2. It requires the systematic investigation of simple equations.