## April 2024 challenge

## Puzzle One

A magic rectangular cloth always shrinks its length to $1 / 2$ and width to $1 / 3$ whenever its owner wishes something. After three such wishes, its surface is now $4 \mathrm{~cm}^{2}$.

What was the original length if the original width was 9 cm ?

## Puzzle Two

A bag containing coins of 1 dollar, 50 cents and 25 cents in the ratio $3: 5: 7$. The total amount is $\$ 1,856.00$. Find the number of coins for each denomination.

## Puzzle Three

Below is an special safe's keypad. To open, you must press the keys in the correct sequencer until the last key marked 'OPEN'. The number on each key tells you how many keys that you must move and the letter tells you in which direction to move $(U=u p, D=$ down, $L=$ left and $R=$ right). Which key is the first key in the sequence that you must press to open the safe?

| $3 R$ | $3 R$ | $5 D$ | $1 L$ | $5 D$ | $1 D$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $1 R$ | $2 R$ | $2 R$ | $4 D$ | $1 D$ | $2 D$ |
| $1 U$ | $2 U$ | $1 U$ | $1 L$ | $3 L$ | $5 L$ |
| $2 R$ | $1 L$ | $3 D$ | $1 U$ | OPEN | $1 D$ |
| $4 U$ | $3 R$ | $1 L$ | $1 U$ | $1 L$ | $5 L$ |
| $1 D$ | $4 R$ | $2 L$ | $1 D$ | $3 L$ | $3 U$ |
| $4 R$ | $3 U$ | $3 R$ | $2 L$ | $3 U$ | $6 U$ |

