

## Algebra Magic – 2 digit number trick

Write down a 2 digit number between 50 and 100.

Add 54 (chose this number to be 99 – final answer).

Cross out 100s digits and add it to remaining 2 digit number.

Subtract your result from the starting number.

The answer will be 45.

If you add 62, the answer will be 37, in general if you add A, the answer will be  $99 - A$ .

$$10a + b$$

$$10a + b + 54$$

$$10a + b + 54 - 99 = 10a + b - 45$$

$$10a + b - (10a + b - 45) = 45$$

$$10a + b$$

$$10a + b + (99 - c) = 10a + b + 99 - c$$

$$10a + b + 99 - c - 100 + 1$$

$$10a + b - (10a + b + 99 - c - 100 + 1)$$

$$10a + b - 10a - b - 99 + c + 100 - 1 = c$$