Playing with Numbers: Exercise 16.1

Find the values of the letters in each of the following and give reasons for the steps involved.

Q. 1

```
    3   A
  + 2   5
  ─────────
    B   2
  ─────────
```

Sol: Calculation for one's place,
By putting A = 0, 1, 2, 3, 4, 5, 6… so on. We observe that
A = 7, 7 + 5 = 12
So, at one's place is 2 and 1 will carry over tenth's place.
Calculation for tenth's place,
1 + 3 + 2 = B
B = 6
Thus, A = 7 and B = 6

Q.2

```
    4   A
    9   8
  ─────────
  C B   3
  ─────────
```

Sol: Calculation for one's place,
By putting A = 0, 1, 2, 3, 4, 5, 6… so on. We observe that
A = 5, 5 + 8 = 13
So, at one's place is 3 and 1 will carry over tenth's place.
Calculation for tenth's place,
1 + 4 + 9 = 13
So, at tenth place is 4 and 1 will carry over thousand's place.
So B = 4
Calculation for thousand's place
C = 1
Thus, A = 5, B = 4 and C =1

Q.3

```
    1   A
  x     A
  ─────────
    9   A
  ─────────
```

Sol: By putting A = 0, 1, 2, 3, 4, 5, 6… so on. We observe that
A x A = 6 x 6
      = 36
So, 6 will be at one's place and 3 will be the carry over tenth's place.
Now, 1 x 6 + 3 = 9
So, 9 is at tenth's place.
Thus, A = 6

Q.4

```
    A   B
  + 3   7
  ─────────
    6   A
```

Sol: By putting B = 0, 1, 2, 3, 4, 5, 6... so on. We observe that B = 5, that will give,
5 +7 = 12
So, A = 2 will be at one's place and 1 will carry over at tenth's place
1 + A + 3 = 6
Thus, A= 2 and B = 5

Q.5

```
    A   B
  x     3
  ─────────
  C A   B
```

Sol: By putting, B = 0, 1, 2.....so on. We observe that B = 0 will give,
0 x 3 = 0 which will be at one's place.
And A = 5 which will give,
3 x 5 = 15
So, 5 will be at tenth's place and 1 will carry over at thousand's place.
C = 1
Thus, A = 5, B = 0 and C = 1.

Q.6

```
    A   B
  x     5
  ─────────
  C A   B
```

Sol: By putting B = 0, 1, 2, 3, 4, 5, 6... so on. We observe that
B = 0 will give 0 x 5 = 0
So, at one's place B = 0.
And By putting A = 0, 1, 2, 3, 4, 5, 6... so on. We observe that
A = 5 will give 5 x 5 = 25
So, at tenth's place A = 5 and 2 will carry over thousand's place.
So, C = 2
Thus, A = 5, B = 0 and C = 2.

Q.7

```
    A   B
  x     6
  ─────────
  B B   B
```

Sol: Since, product of B and must be equal to one's place digit as B.
So, by putting B = 0, 1, 2, 3, 4, 5, 6... so on. We observe that
 6 x 2 = 12, 6 x 4 = 24, 6 x 6 = 36 and 6 x 8 =48
Firstly, we try to put B = 4, we get the digit 4 at one's place and 2 will carry over tenth's place and now remaining two B's digit should be 4 and 4.
So, by putting A = 7, we get 7 x 6 = 42 + 2 = 44
Thus, A = 7 and B = 4.

Q.8

```
    A   1
+   1   B
_____
    B   0
```

Sol: By putting B = 0, 1, 2, 3, 4, 5, 6... so on. We observe that
B = 9 will give 1 + 9 = 10
So, 0 will be at one's place and 1 will carry over at tenth's place.
Now, put A = 7 then 7 + 1 + 1 = 9
So, tenth's place digit B = 9
Thus, A = 7 and B = 9.

Q.9

```
    2   A   B
+   A   B   1
_____
    B   1   8
```

Sol: By putting B = 0, 1, 2, 3, 4, 5, 6... so on. We observe that
B = 7 will give 7 + 1 = 8
Now putting A = 4 and B = 7 at tenth's place digits, then 4 + 7 = 11
In which first 1 digit at tenth's place and another 1 will carry over at thousand's place.
Now for thousand's place 2 + 4 + 1 = 7
Thus, A = 4 and B = 7

Q.10

```
    1   2   A
+   6   A   B
_____
    A   0   9
```

Sol: By putting A and B = 0, 1, 2, 3, 4, 5, 6... so on. We observe that
A = 8 and B = 1, will give 8 + 1 = 9
Now at tenth's place 2 + 8 = 10
Digit 0 will at tenth's place and 1 will carry over at thousand's place.
So, at thousand's place 1 + 1 + 6 = 8
Thus, A = 8 and B = 1.