

## Exercise 2.2

1. Add the following.

a)

|   | L | TTh | Th | H | T | O |
|---|---|-----|----|---|---|---|
|   | 7 | 1   | 2  | 6 | 2 | 5 |
| + | 2 | 2   | 1  | 5 | 3 | 6 |
|   |   |     |    |   |   |   |

b)

|   | L | TTh | Th | H | T | O |
|---|---|-----|----|---|---|---|
|   |   | 6   | 4  | 4 | 8 | 1 |
| + |   | 3   | 2  | 7 | 2 | 1 |
|   |   |     |    |   |   |   |

c)

|   | L | TTh | Th | H | T | O |
|---|---|-----|----|---|---|---|
|   | 7 | 5   | 6  | 2 | 0 | 0 |
|   |   | 6   | 4  | 1 | 4 | 0 |
| + | 1 | 2   | 2  | 5 | 2 | 6 |
|   |   |     |    |   |   |   |

d)

|   | L | TTh | Th | H | T | O |
|---|---|-----|----|---|---|---|
|   | 2 | 5   | 6  | 4 | 2 | 1 |
|   | 1 | 0   | 9  | 2 | 8 | 2 |
| + | 1 | 6   | 2  | 1 | 2 | 1 |
|   |   |     |    |   |   |   |

2. Find the sum.

a) 7,89,261 and 90,123

b) 1,15,206; 2,52,621 and 5,62,131

## Properties of Addition

The properties of addition also hold for larger numbers.

1. Order Property of Addition

The two numbers when added in any order does not change the sum.

Let's add 25,000 and 15,000

|   | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 2   | 5  | 0 | 0 | 0 |
| + | 1   | 5  | 0 | 0 | 0 |
|   | 4   | 0  | 0 | 0 | 0 |

|   | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 1   | 5  | 0 | 0 | 0 |
| + | 2   | 5  | 0 | 0 | 0 |
|   | 4   | 0  | 0 | 0 | 0 |

The sum is the same.

So,  $25,000 + 15,000 = 15,000 + 25,000 = 40,000$

2. Additive Identity Property

When we add zero to a number, it gives the number itself.

$$999 + 0 = 999$$

$$9,999 + 0 = 9,999$$

$$99,999 + 0 = 99,999$$

$$9,99,999 + 0 = 9,99,999$$

$$0 + 999 = 999$$

$$0 + 9,999 = 9,999$$

$$0 + 99,999 = 99,999$$

$$0 + 9,99,999 = 9,99,999$$

0 is called the additive identity.

### 3. Grouping Property of Addition

The sum of three or more numbers does not change even, when their grouping is changed.

Let's add 9000; 12,000 and 70,000 in two different ways.

$$(12,000 + 70,000) + 9,000$$

|   | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 1   | 2  | 0 | 0 | 0 |
| + | 7   | 0  | 0 | 0 | 0 |
|   | 8   | 2  | 0 | 0 | 0 |



|   | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 8   | 2  | 0 | 0 | 0 |
| + |     | 9  | 0 | 0 | 0 |
|   | 9   | 1  | 0 | 0 | 0 |

$$12,000 + (70,000 + 9,000)$$

|   | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 7   | 0  | 0 | 0 | 0 |
| + |     | 9  | 0 | 0 | 0 |
|   | 7   | 9  | 0 | 0 | 0 |



|   | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 7   | 9  | 0 | 0 | 0 |
| + | 1   | 2  | 0 | 0 | 0 |
|   | 9   | 1  | 0 | 0 | 0 |

The sum is the same.

11-05-2020

## Exercise 2.2

C.W. 1. Add the following.

a)

| L | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
| 7 | 1   | 2  | 6 | 2 | 5 |
| + | 2   | 2  | 1 | 5 | 3 |
| 9 | 3   | 4  | 7 | 7 | 8 |

c)

| L | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
| 7 | 5   | 6  | 2 | 0 | 0 |
|   | 6   | 4  | 1 | 4 | 0 |
| + | 1   | 2  | 2 | 5 | 2 |
| 9 | 4   | 2  | 8 | 9 | 2 |

b)

| L | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
|   | 6   | 4  | 4 | 8 | 1 |
| + | 3   | 2  | 7 | 2 | 1 |
|   | 9   | 7  | 2 | 0 | 2 |

d)

| L | TTh | Th | H | T | O |
|---|-----|----|---|---|---|
| 2 | 5   | 6  | 4 | 2 | 1 |
| 1 | 0   | 9  | 2 | 8 | 2 |
| + | 1   | 6  | 2 | 1 | 2 |
| 5 | 2   | 7  | 8 | 2 | 4 |

H.W. 2. Find the sum.

a) 7,89,261 and 90,123

b) 1,15,206; 2,52,621 and 5,62,131