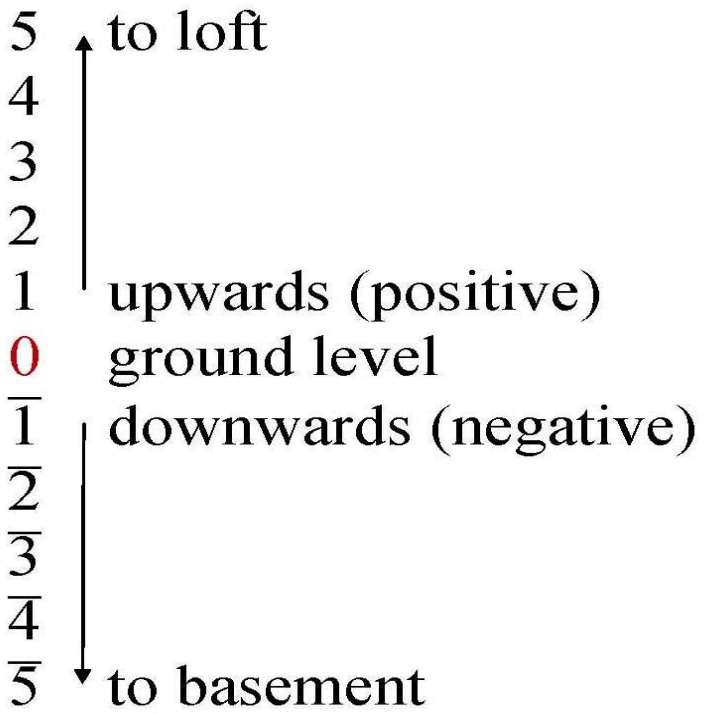
Positive & Negative Numbers

- Positive Numbers are used to express the size of something; or its **position or distance after or above the beginning.**

- Negative Numbers are used to express that something is lacking, missing or absent; or its **position before or below the beginning**, when we go backwards or downwards.

- The steps of a ladder going up to a **loft** can be named with positive numbers and those going down into the **basement** with negative numbers.



Or:

$\bar{5}, \bar{4}, \bar{3}, \bar{2}, \bar{1}, 0, 1, 2, 3, 4, 5$

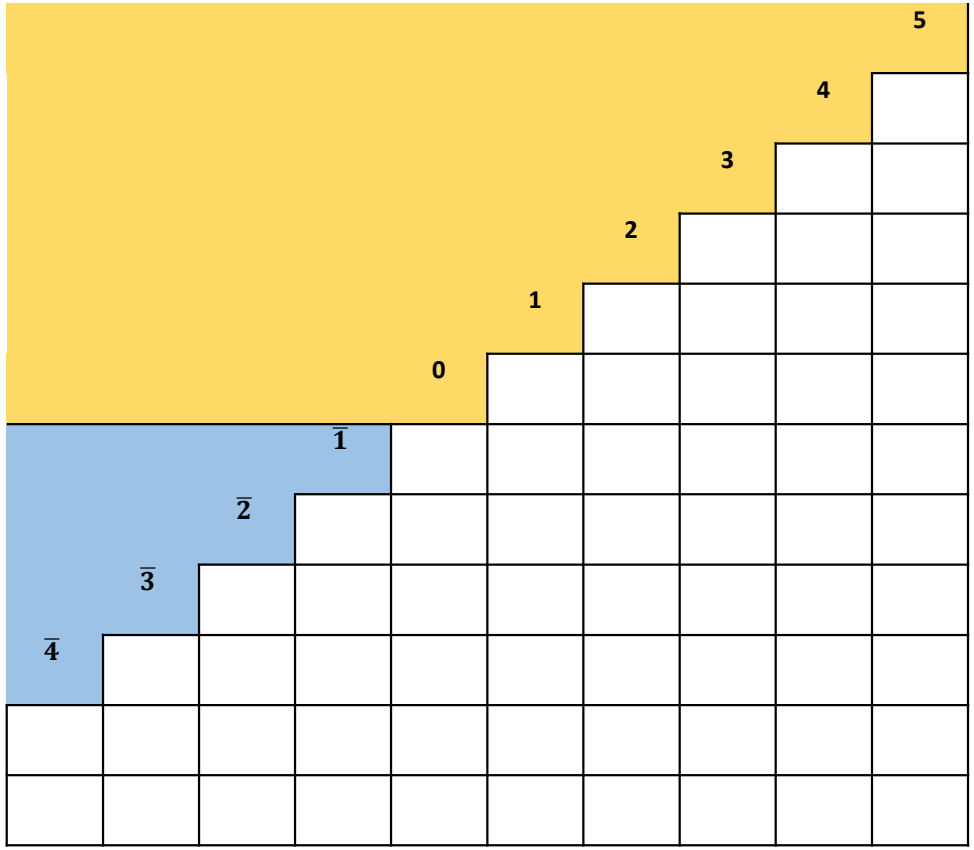
before start after

There have been several ways of indicating negative numbers.

- Most common is the minus or hyphen sign in front of a digit. -45
- Sometimes used is an elevated hyphen in front of a number. ˉ83 to differentiate it from the minus subtraction operator.
- A third way, used in Vedic mathematics and in logarithms, is a bar over the digit. This makes just this digit negative, not the whole number. $\bar{5}$

Thus $7\bar{2}$ = 68 (i.e. 70 – 2)

Addition and Subtraction of Positive and Negative Numbers



WILL - action – operation – [walking steps]

Addition [walking up] and **Subtraction** [walking down] are operations / actions / movements.

Addition – operator **faces** in the direction to the **Right** and **up**. Subtraction – operator **faces** to **Left** and **down**.

THINKING – value, distance [number of steps]

Positive is a distance or number of steps **forward**;

Negative is a distance or number of steps **backwards**.

To Add a positive Number, say 3, **face** Right [plus] and take 3 steps **forward**. 2 + 3 = 5

To Add a negative Number, say $^{-}4$, face Right and take 4 steps **backward**. 5 + $^{-}4$ = 1

To Subtract a positive Number, say 5, face Left [minus] and take 5 steps forward. 1 – 5 = $^{-}4$

To Subtract a negative Number, say 6 , face Left [minus] and take 6 steps backward. 4 - 6 = $^{-}2$

Negative or bar numbers

The bar over a numeral makes it negative.

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$$9 = 10 - 1 = 1\overline{1}$$

Nine is ten minus one or ten bar one

$$8 = 10 - 2 = 1\overline{2}$$

$$7 = 10 - 3 = 1\overline{3}$$

$$6 = 10 - 4 = 1\overline{4}$$

$$5 = 10 - 5 = 1\overline{5}$$

$$4 = 10 - 6 = 1\overline{6}$$

$$3 = 10 - 7 = 1\overline{7}$$

$$2 = 10 - 8 = 1\overline{8}$$

$$1 = 10 - 9 = 1\overline{9}$$

$$199 = 200 - 1 = 20\overline{1}$$

Arithmetic using bar numbers

$$5 + \bar{3} = 2$$

$$25 + 37 = 25 + 4\bar{3} = 62$$

$$[20+40] + [5 + \bar{3}] = 62$$

$$74 - 48 = 74 - 5\bar{2}$$

$$= 70 - 50 + 4 - \bar{2}$$

$$= 20 + 6$$

$$= 26$$