Estimation

The estimation of a number is a reasonable guess of the actual value. Estimation means approximating a quantity to the accuracy required. This is done by rounding off the numbers involved and getting a quick and rough answer.

Rounding off a number to the nearest tens

The numbers 1, 2, 3 and 4 are nearer to 0. So, these numbers are rounded off to the lower ten. The numbers 6, 7, 8 and 9 are nearer to 10. So, these numbers are rounded off to the higher ten. The number 5 is equidistant from both 0 and 10, so it is rounded off to the higher ten.

Let's understand with some examples:-

- (A) We round off **31** to the nearest ten as **30**
- (B) We round off 57 to the nearest ten as 60
- (C) We round off 45 to the nearest ten as 50

Rounding off a number to the nearest hundreds

The numbers 201 to 249 are closer to 200. So, these numbers are rounded off to the nearest hundred i.e., 200. The numbers 251 to 299 are closer to 300. So, these numbers are rounded off to the higher hundred i.e., 300. The number 250 is rounded off to the higher hundred.

Let's understand with some examples:-

- (A) We round off **578** to the nearest **100** as **600**.
- (B) We round off **310** to the nearest **100** as **300**.

Rounding off a number to the nearest thousands

Similarly, 1001 to 1499 are rounded off to the lower thousand i.e., 1000, and 1501 to 1999 to the higher thousand i.e., 2000. The number 1500 is equidistant from both 0 and 1000, and so it is rounded off to the higher thousand i.e., 2000. **Let's understand with some examples:-**

- (A) We round off 2574 to the nearest thousand as 3000.
- (B) We round off **7105** to the nearest thousand as **7000**.

➡ Estimation of sum or difference:

When we estimate sum or difference, we should have an idea of the place to which the rounding is needed.

Let's understand with some examples: (A) Estimate 4689 + 19316
We shall round off the numbers to the nearest thousands.
19316 is rounded off to 19000
4689 is rounded off to 5000
Estimated sum:
19000 + 5000 = 24000

(B) Estimate 1398 – 526
We shall round off these numbers to the nearest hundreds.
1398 is rounded off to 1400
526 is rounded off to 500
Estimated difference:
1400 – 500 = 900

Estimation of the product:

To estimate the product, round off each factor to its greatest place, then multiply the rounded off factors.

Let's understand with some examples:-

Estimate 92 x 578

The first number, **92**, can be rounded off to the nearest ten as **90**. The second number, 578, can be rounded off to the nearest hundred as 600. Hence, the estimated product =90 x 600 = 54,000.