Example 1 Evaluate

1. First, we note that

(say)

2. Therefore...

(iii) Put

(say)

Here, , therefore

(iv) Put

Here,

Thus, limit does not exist.

Ans.

Example 2 Evaluate .

Solution.

(i) (say)

(ii) (say)

Here, , therefore

(iii) Put

(say)

Here, , therefore

(iv) Put

(say)

Here,

Thus, limit exists with value 0.

Ans.