NCERT Discrete 11.9.3 -26

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Question: Insert two numbers between 3 and 81 so that the resulting sequence is G.P.

Solution: A sequence is said to be in Geometric Progression when it is in the form of a, ar, ar^2, ar^3, ar^4..

where a is first term and r is common ratio.

When there are four terms, the sequence becomes a, ar, ar^2, ar^3

From the question given

$$a = 3 \tag{1}$$

$$ar^3 = 81 \tag{2}$$

from (1) and (2) we get

$$r^3 = 27$$

$$r = 3$$

the sequence required is:

$$3, 3 \times 3, 3 \times 3^2, 81 \tag{3}$$

$\therefore$ Required numbers are 9 and 27.