

# AI1110 Assignment 1

Abhinav Yadav, cs21btech11002

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## Q11 (b)

The product of two consecutive natural numbers which are multiples of 3 is equal to 810. Find the two numbers.

## Solution

Let the two consecutive natural numbers which are multiples of 3 be  $3n$  and  $3n + 3 \quad \exists n \in \mathbb{N}$

**According to the question:**

$$\begin{aligned} 3n(3n + 3) &= 810 \\ \Rightarrow 9n(n + 1) &= 810 \\ \Rightarrow n(n + 1) &= 90 \\ \Rightarrow n^2 + n - 90 &= 0 \\ \Rightarrow (n + 10)(n - 9) &= 0 \\ \Rightarrow n = -10 \quad \text{or} \quad n = 9 \end{aligned}$$

discarding  $n = -10$  as  $n \in \mathbb{N}$

$$\begin{aligned} \Rightarrow n &= 9 \\ \Rightarrow 3n &= 27 \\ \Rightarrow 3n + 3 &= 30 \end{aligned}$$

The two numbers are:

$$\boxed{27, 30}$$