QUESTION

Find the period of the function

$$f(x) = x + 3$$

SOLUTION

By the definition, the period of the function is

$$\exists P \neq 0 : f(x + P) = f(x)$$

(More information: https://en.wikipedia.org/wiki/Periodic_function)

In our case,

$$f(x) = x + 3 \rightarrow f(x + P) = (x + P) + 3 \rightarrow$$

$$\begin{cases} f(x) = x + 3 \\ f(x + P) = x + P + 3 \rightarrow x + 3 = x + P + 3 \rightarrow P = x + 3 - x - 3 \rightarrow \boxed{P = 0} \\ f(x) = f(x + P) \end{cases}$$

Conclusion,

$$\boxed{f(x) = x + 3 \ is \ non - periodic \ function}$$

ANSWER

$$f(x) = x + 3 \ is \ non - periodic \ function$$