

# Assignment

## 12.8 - 6

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### QUESTION

A charged particle oscillates about its mean equilibrium position with a frequency of  $10^9 \text{ Hz}$ . What is the frequency of the electromagnetic waves produced by the oscillator?

### SOLUTION

Symbol	Value	Description
$y(t)$	$\cos(2\pi f_c t)$	Wave equation of electro-magnetic wave
$f_c$	$10^9$	Frequency of electromagnetic wave
$t$	seconds	Time

TABLE 0  
VARIABLE DESCRIPTION

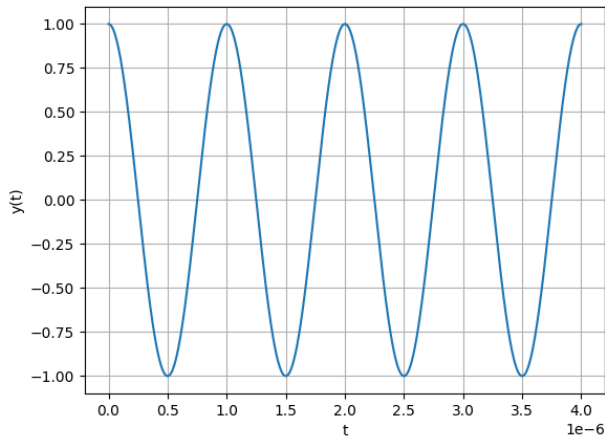


Fig. 0.  $y(t) = \cos(2\pi \times 10^9 t)$