

An oscillator vibrates at 3.11Hz how long will it take to go through 50 cycles?

Frequency is the number of occurrences of a repeating event per unit time. The period is the duration of one cycle in a repeating event, so the period is the reciprocal of the frequency:

$$T = \frac{1}{f}$$

Time to go through 50 cycles equals:

$$T_{50} = 50 * T$$

where T – period of oscillator.

Therefore:

$$T_{50} = \frac{50}{f} = \frac{50}{3.11} = 16.08 \text{ seconds}$$

Answer: 16.08 seconds