

Answer on Question #76295, Physics / Other

Physics oscillation.

A child on a swing goes backwards and forwards 100 times in 5 minutes.

Calculate the period of oscillation and the frequency in hertz.

Solution:

The period of the oscillation is the time taken for one oscillation.

The time period = time taken for no. of oscillations / no. of oscillations:

$$T = \frac{t}{N} = \frac{5 \text{ min}}{100} = \frac{5 \times 60 \text{ s}}{100} = 3 \text{ s}$$

The frequency of oscillation is the number of oscillations in one second.

$$f = \frac{1}{T} = \frac{1}{3} = 0.33 \text{ Hz}$$

Answer: $T = 3 \text{ s}; f = 0.33 \text{ Hz}$.

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