

Answer on Question #75849 Physics / Other

Two simple pendulums of length $l_1 = 1$ m and $l_2 = 16$ m are in phase at the mean position at a certain instant of time. If T is the time period of shorter pendulum then the minimum time after which they will again in phase is.

Solution:

The period of a simple pendulum

$$T = 2\pi \sqrt{\frac{l}{g}}$$

So

$$T_1 = T$$

$$T_2 = 2\pi \sqrt{\frac{16l}{g}} = 4T$$

The minimum time after which pendulums will again in phase is $4T$

Answer: $4T$

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