

HITT

An ideal pendulum of length L is excited by an external force which moves the suspension point with a frequency far below (above) the resonance. If we now increase the frequency by a factor of three, by what factor does the resulting amplitude change? First number for below, second number for above.

$$x_m(3\omega \ll \omega_0) = C_1 x_m(\omega \ll \omega_0)$$

$$x_m(3\omega \gg \omega_0) = C_2 x_m(\omega \gg \omega_0)$$

A: $C_1=1/3, C_2=1/3$

C: $C_1=1/3, C_2=3$

B: $C_1=1, C_2=9$

D: $C_1=1, C_2=1$

E: $C_1=1/9, C_2=9$