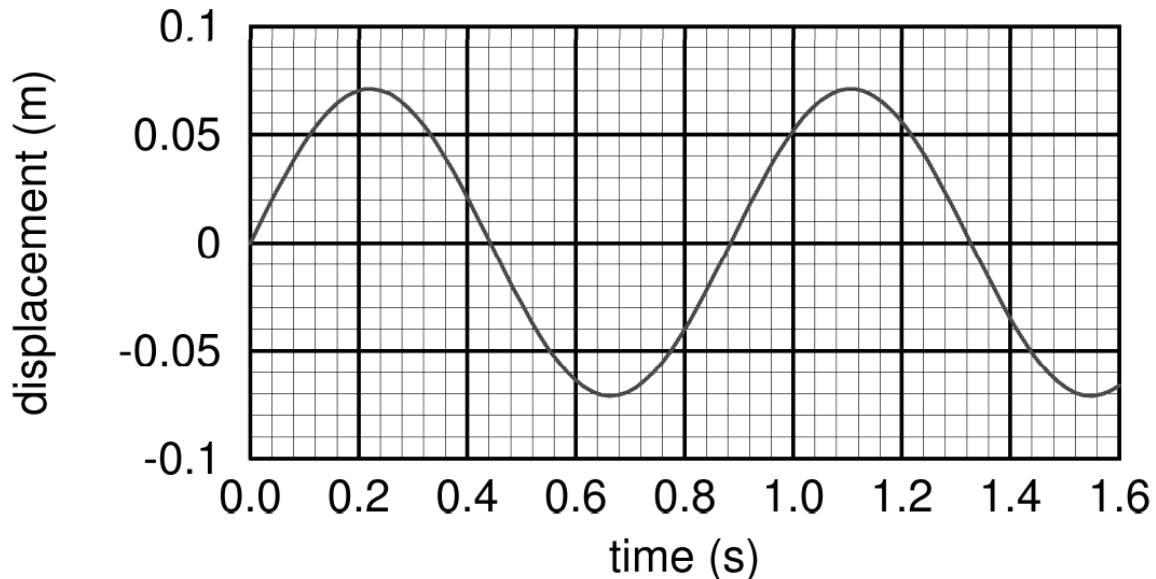


Wednesday March 22, 2006
In Lecture quiz #10, Physics 131

Name: _____

The graph below represents the position x versus time t of a mass oscillating on a spring. Circle the correct answers or fill in the numerical value.



The general formula for harmonic motion is $x(t) = A \cos(\omega t + \phi)$.

1. What is the amplitude A for this motion? _____
2. The graph can be represented by the formula $x(t) = A \sin(\omega t)$ where the phase ϕ is zero. But if we insist on using the cosine formula, then we have to choose a non-zero phase. What should it be:
 $\phi = -\pi, -\pi/2, \pi/2, \text{ or } \pi$?
3. What is the period T ? _____
4. Approximately what is the angular frequency ω , (circle one) 0 rad/s, 2 rad/s, 4 rad/s, 7 rad/s, 12 rad/s ?

Answers

1. $A=0.07$ m
2. $\phi = -\pi/2$. Remember that $\sin(x)=\cos(x-\pi/2)$.
3. $T = 0.88$ s
4. $\omega = 7$ rad/s (remember $\omega = 2\pi/T$. This is also $\omega = 2\pi f$, where the frequency f is in cycles/s or Hz.)