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 $\phi$ is zero. But if we insist on using the cosine formula, then we have to choose a non-zero phase. What should it be: $\phi = -\pi$, $-\pi/2$, $\pi/2$, or $\pi$?
3. What is the period $T$? ______________
4. Approximately what is the angular frequency $\omega$, (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.)