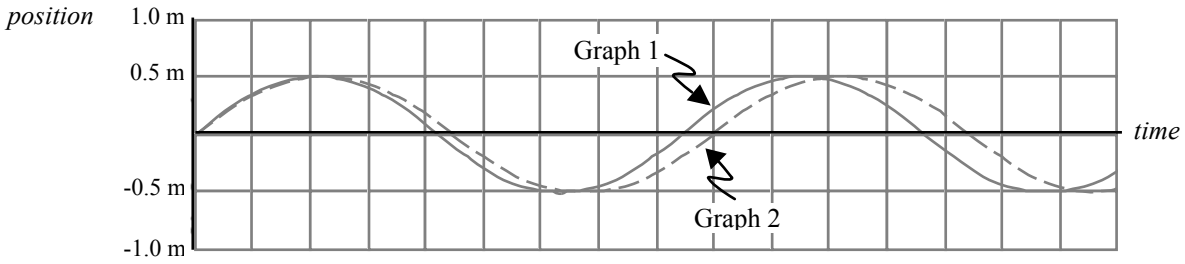
Consider two linear oscillators, *A* and *B,* that began to move *prior to* the instant $t = 0$.

- One oscillator *(A)* is an ideal (frictionless) simple harmonic oscillator with amplitude 0.50 m.
- Another oscillator *(B)* is identical to oscillator *A except* that it has a linear damping force *and* a sinusoidal driving force applied. The driving force has been adjusted to achieve resonance, so that at $t = 0$ a (resonant) steady-state amplitude of 0.50 m is achieved.

A. Two position versus time graphs, each sinusoidal in form and with amplitude 0.50 m, are shown below.



Which graph *(1* or *2)* represents which oscillator *(A* or *B), or* could each graph represent *either* oscillator? Explain your reasoning. If there is insufficient information to tell, state what additional information you would need.

B. Recall that the driving force applied to oscillator *B* is adjusted so that resonance is achieved.

As oscillator *B* moves, at which location does the oscillator experience the *greatest magnitude* of force by the driver (i) in the $+x$ *direction?* (ii) in the $-x$ direction? Indicate your answers by clearly labeling the appropriate points on the above graph. Explain your reasoning.