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*University of Pennsylvania PEN.1*

**Pre Lab for Galileo's Pendulum**

1) Consider a pendulum for which the displacement is  $x(t) = 3\sin(10t)$

Draw the displacement on this graph.

2) What is the frequency?

3) What is displacement  $x(0)$  at  $t=0$  ?

4) What is displacement  $x(0)$  if  $\phi = \pi / 4$  ?

5) Why can the same displacement also be expressed as a cosine instead of a sine function?