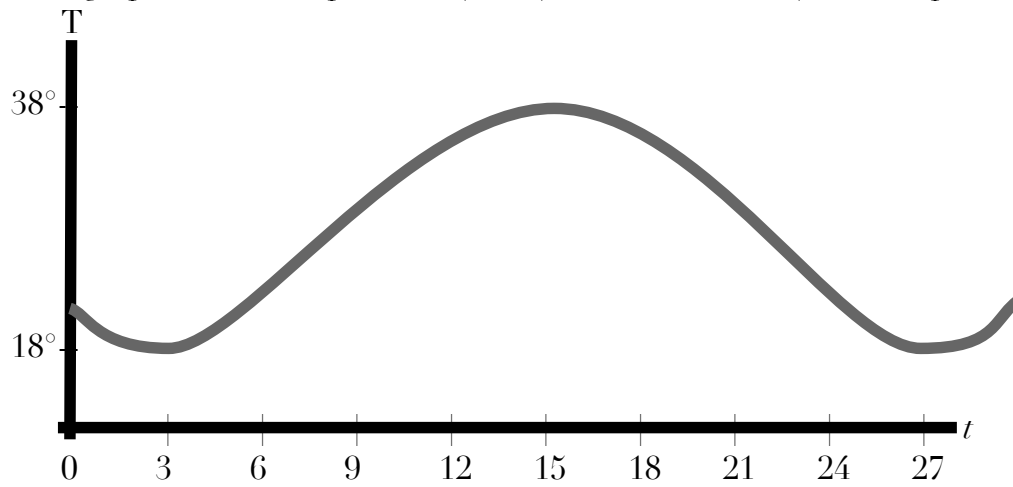


Extra Practice: Graphs of Waves

1) This graph shows temperature (in $^{\circ}\text{C}$) at various times (in hours past midnight) of a day.

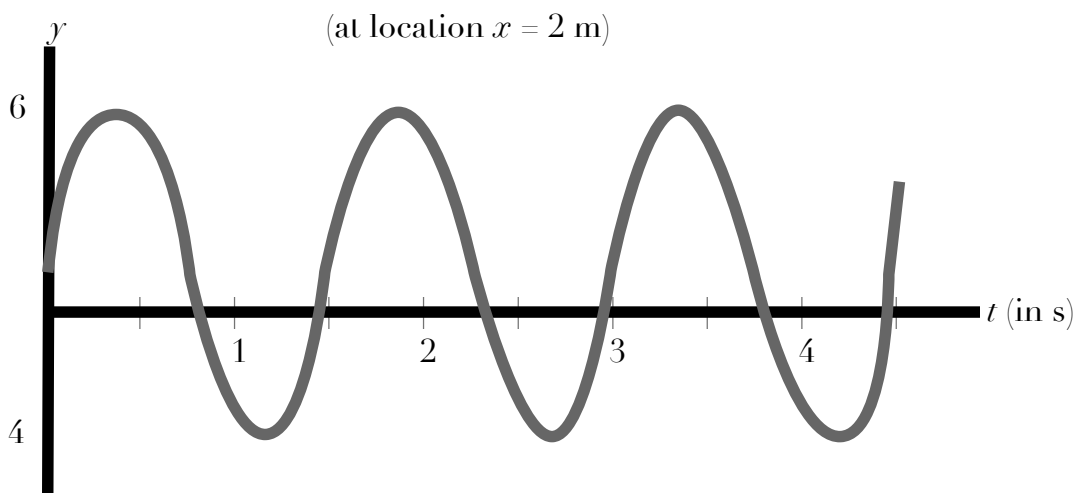
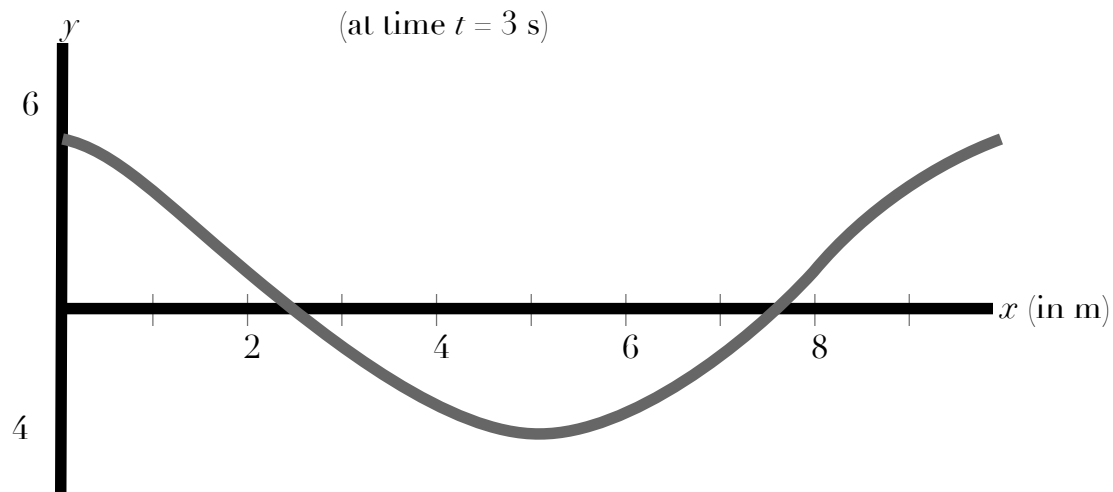


a) Find the amplitude and period of this graph.

b) Write an equation of this graph (temperature as a function of time), including π .
Note that x is not involved — this is an oscillator, not a wave!

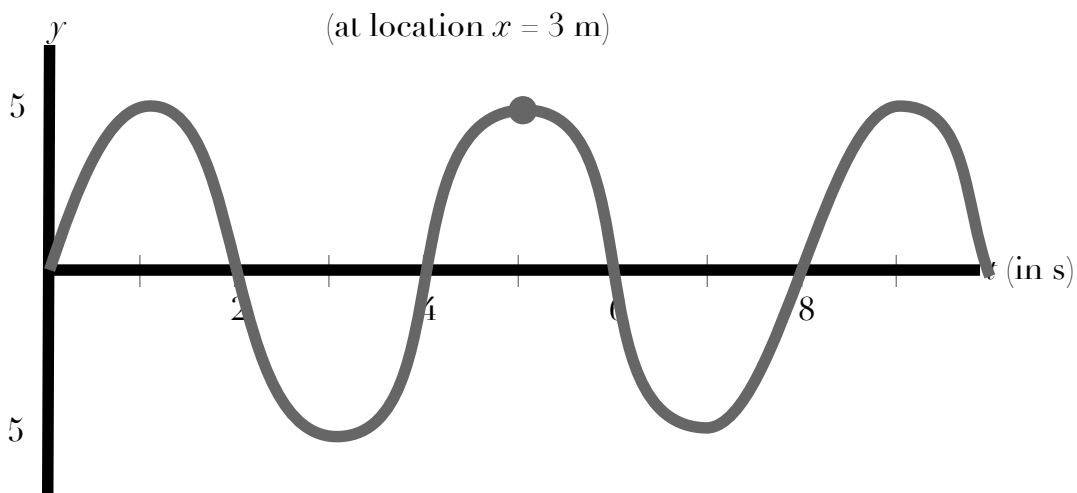
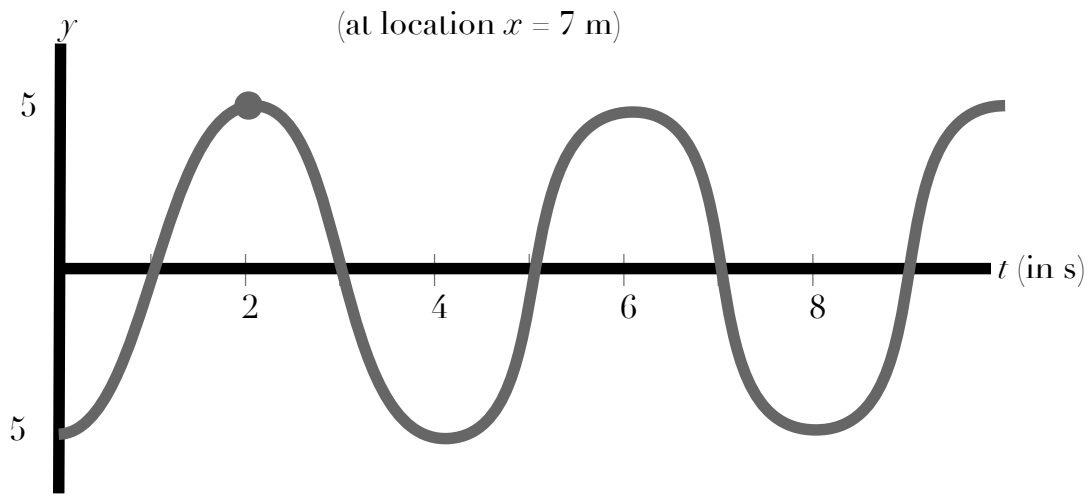
c) Use your equation to predict the exact temperature at 10:00 am the next day.

2) The following graphs represent the same one-dimensional wave.



- Find the amplitude, period, frequency, and wavelength of this wave.
- Find the speed of this wave. Which direction is it traveling? How do you know?
- Find the phase shift, and write out the equation of this wave.

- 3) The following graphs represent the same one-dimensional wave.
Assume the two marked points represent the same crest as the wave moves.



- a) Find the amplitude, period, and frequency of this wave.
- b) Find the speed of this wave. Which direction is it traveling? How do you know?
- c) Find the wavelength and phase shift, and write out the equation of this wave.
- d) On another page, sketch a graph of the *shape* of the wave at time $t = 2$ s.