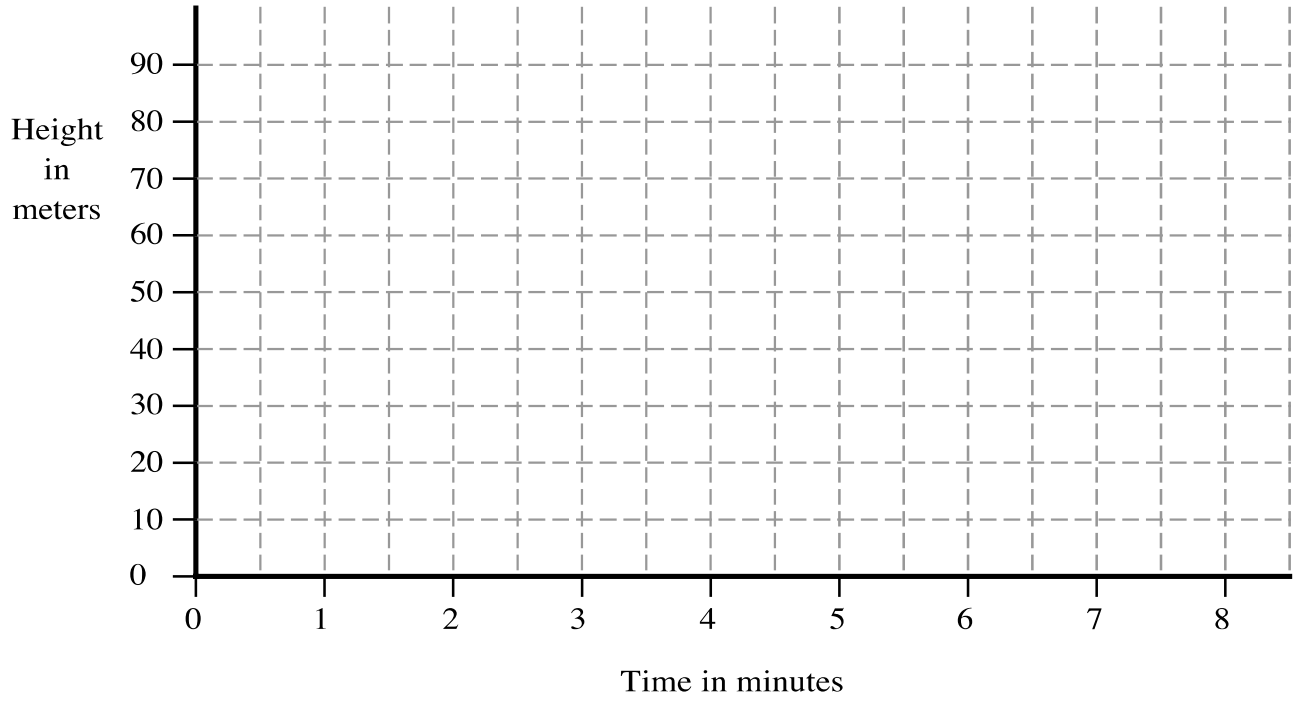
Ferris Wheel

A Ferris Wheel is 60 meters in diameter and rotates once every four minutes.

The center axle of the Ferris Wheel is 40 meters from the ground.

1. Using the axes below, sketch a graph to show how the height of a passenger will vary with time.
   Assume that the wheel starts rotating when the passenger is at the bottom.



2. A mathematical model for this motion is given by the formula:

   $h = a + b \cos ct$ where h = the height of the car in meters
   t = the time that has elapsed in minutes
   a, b, c are constants.

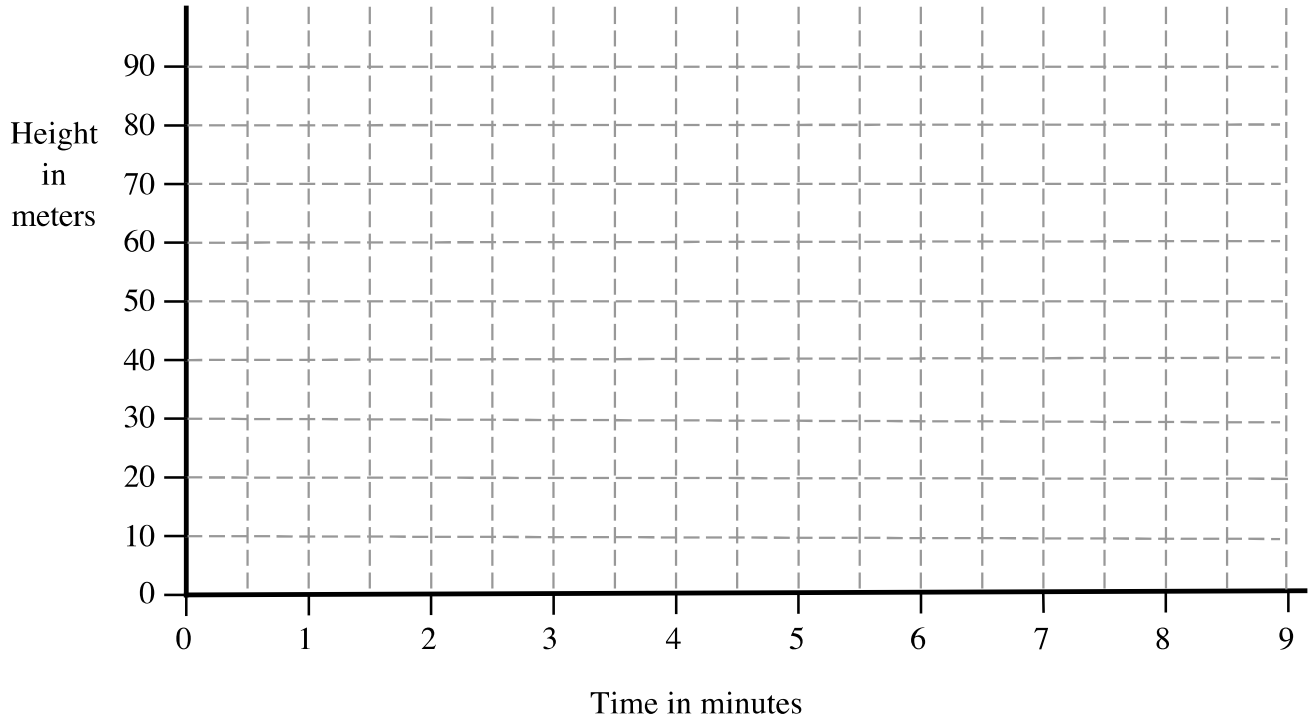
   Find values for a, b and c that will model this situation.

Ferris Wheel (revisited)

A Ferris Wheel is 50 meters in diameter and rotates once every three minutes.

The center axle of the Ferris Wheel is 30 meters from the ground.

1. Using the axes below, sketch a graph to show how the height of a passenger will vary with time.
   Assume that the wheel starts rotating when the passenger is at the bottom.



2. A mathematical model for this motion is given by the formula:

   $h = a + b \cos ct$ where h = the height of the car in meters
   t = the time that has elapsed in minutes
   a, b, c are constants.

   Find values for a, b and c that will model this situation.