

Math 1316: Sample Word Problem about Trig Graphs

April 13, 2022

1. An automatic jump rope machine spins a rope, completing 40 revolutions per minute. The center of the rotating rope oscillates between 2 inches off the ground at its lowest point and 7 feet off the ground at its highest point. Assuming that at time zero the rope starts at its lowest point, write a function of the form

$$y(t) = A \cos(Bt)$$

which describes the height in inches $y(t)$ of the center of the rope as a function of time t . Here, measure t in seconds. Then, sketch a graph of $y(t)$, showing one full period and labeling the axes to identify the maximum, minimum, and period.

$y(t) =$

