$y = \underline{25}\ \underline{\quad}\ (\underline{\quad} - \underline{\theta}) + \underline{30}$

AMP — midline

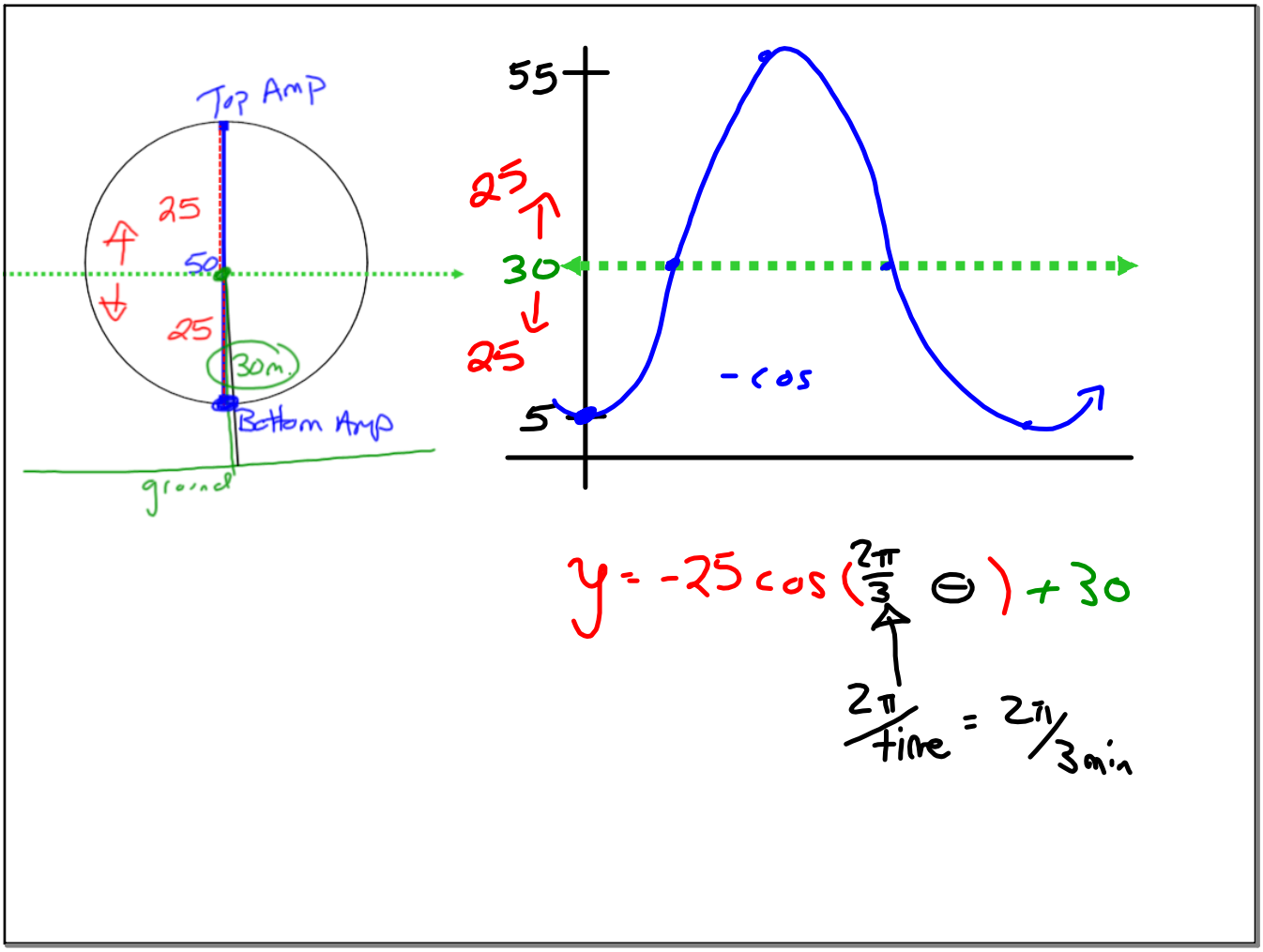
↑ Function based on starting position

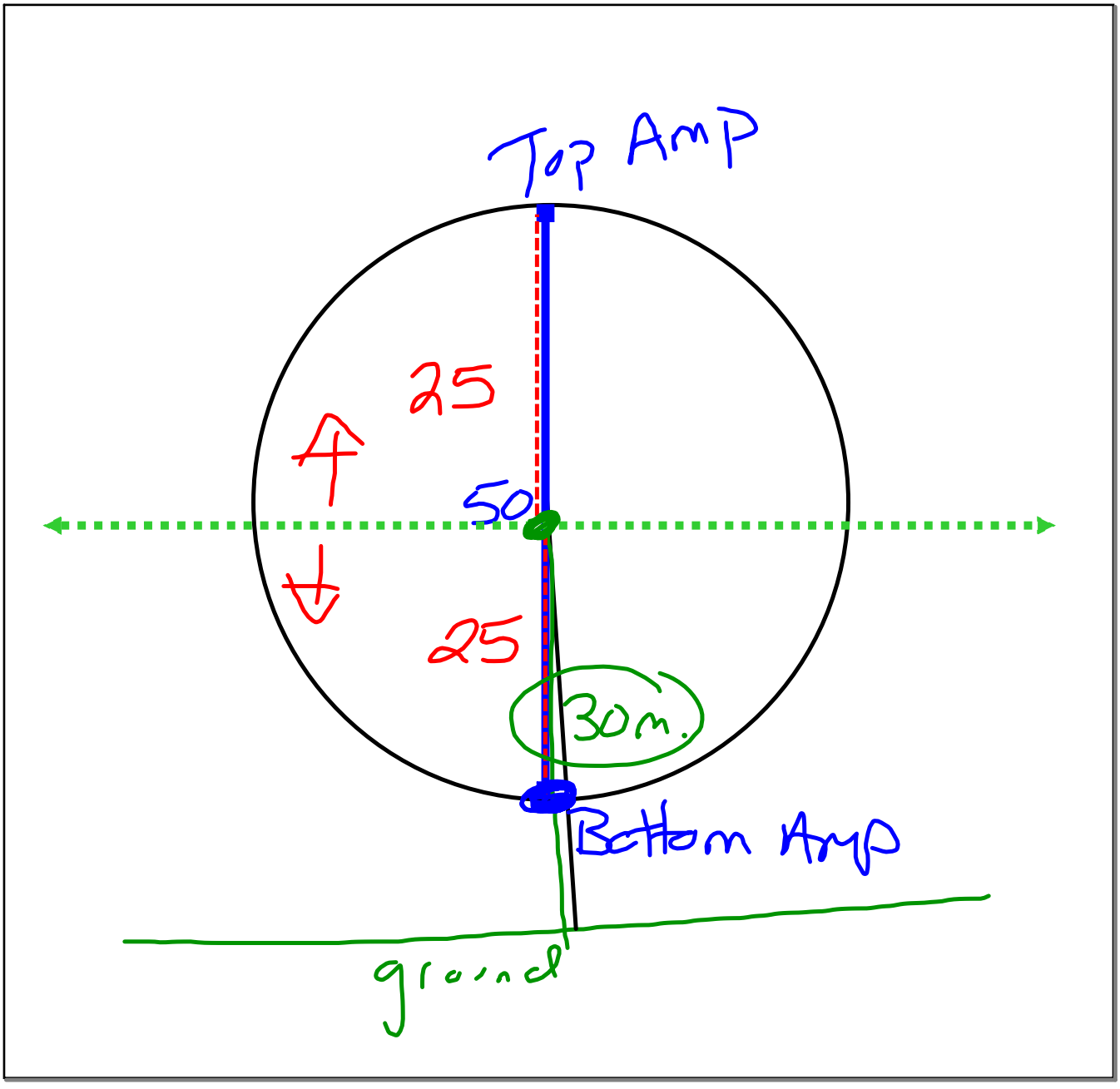
Center of Ferris Wheel axis - 30m.

diameter is 50 m.

rotates once every 3 minutes.

assume the the wheel starts when passenger are at the bottom.


Top Amp
25
50
25
30m
Bottom Amp
ground
55
25
30
25
5
- cos
$y = -25\cos\left(\frac{2\pi}{3}\theta\right) + 30$
$\frac{2\pi}{\text{time}} = \frac{2\pi}{3\text{min}}$



Oct 28-7:37 AM

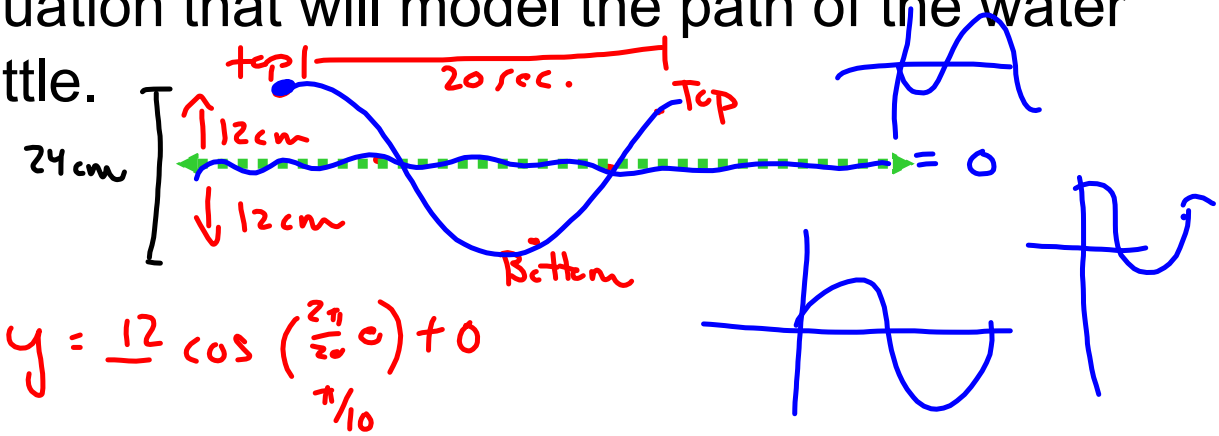
Modeling -- Sine & Cosine Functions

A Ferris Wheel is centered 60 feet off the ground with the bottom of the Ferris Wheel 10 feet off the ground. If it takes 15 minutes to make on full rotation, write the equation that will model the rotations of the Ferris Wheel from the bottom amplitude.

Oct 28-7:08 AM

Modeling -- Sine & Cosine Functions

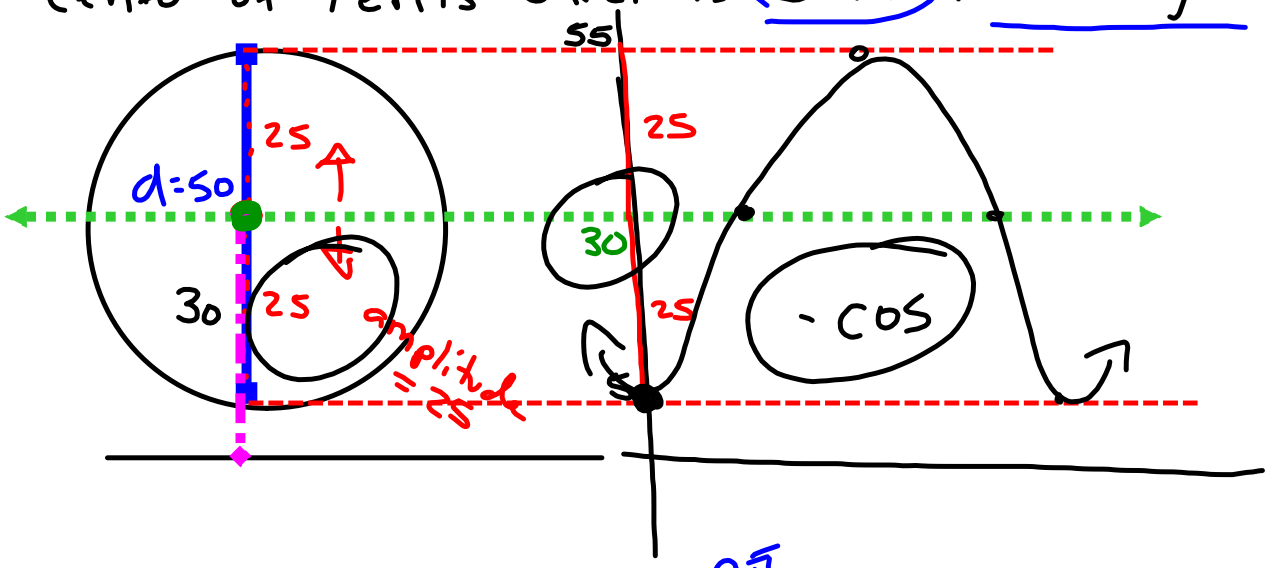
A water bottle is floating in the ocean and travels 24 cm from top amplitude to bottom amplitude in 10 seconds, and then back to the top amplitude in 10 seconds. Write the equation that will model the path of the water bottle.



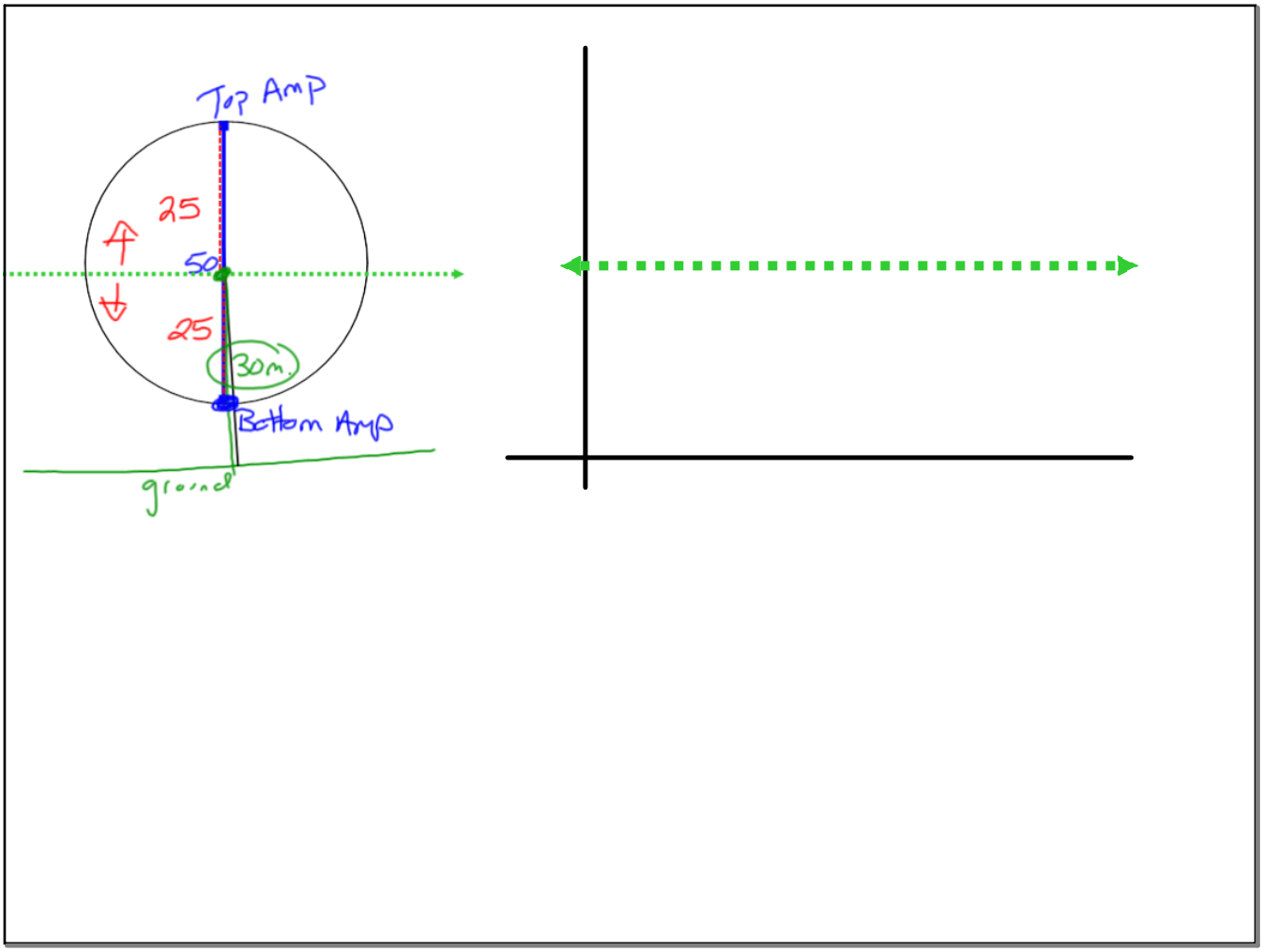
50 m. in diameter ✓

rotates every 3 minutes period

center of Ferris Wheel is 30 m. from the ground.



$$y = -25\cos\left(\frac{2\pi}{3}\theta\right) + 30$$

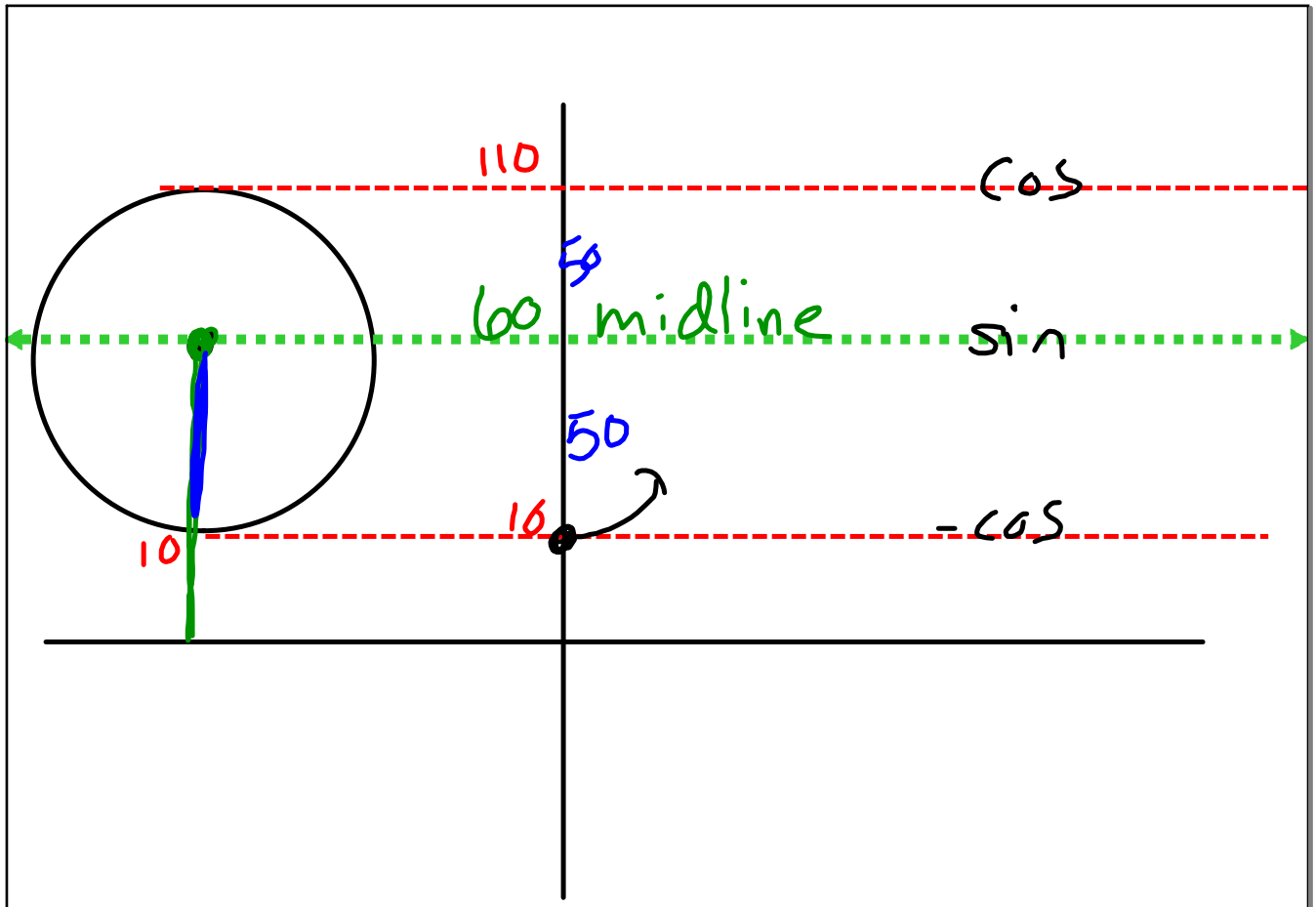


Oct 28-7:44 AM

Modeling -- Sine & Cosine Functions

A Ferris Wheel is centered 60 feet off the ground with the bottom of the Ferris Wheel 10 feet off the ground. If it takes 15 minutes to make on full rotation, write the equation that will model the rotations of the Ferris Wheel from the bottom amplitude.

Oct 28-7:08 AM



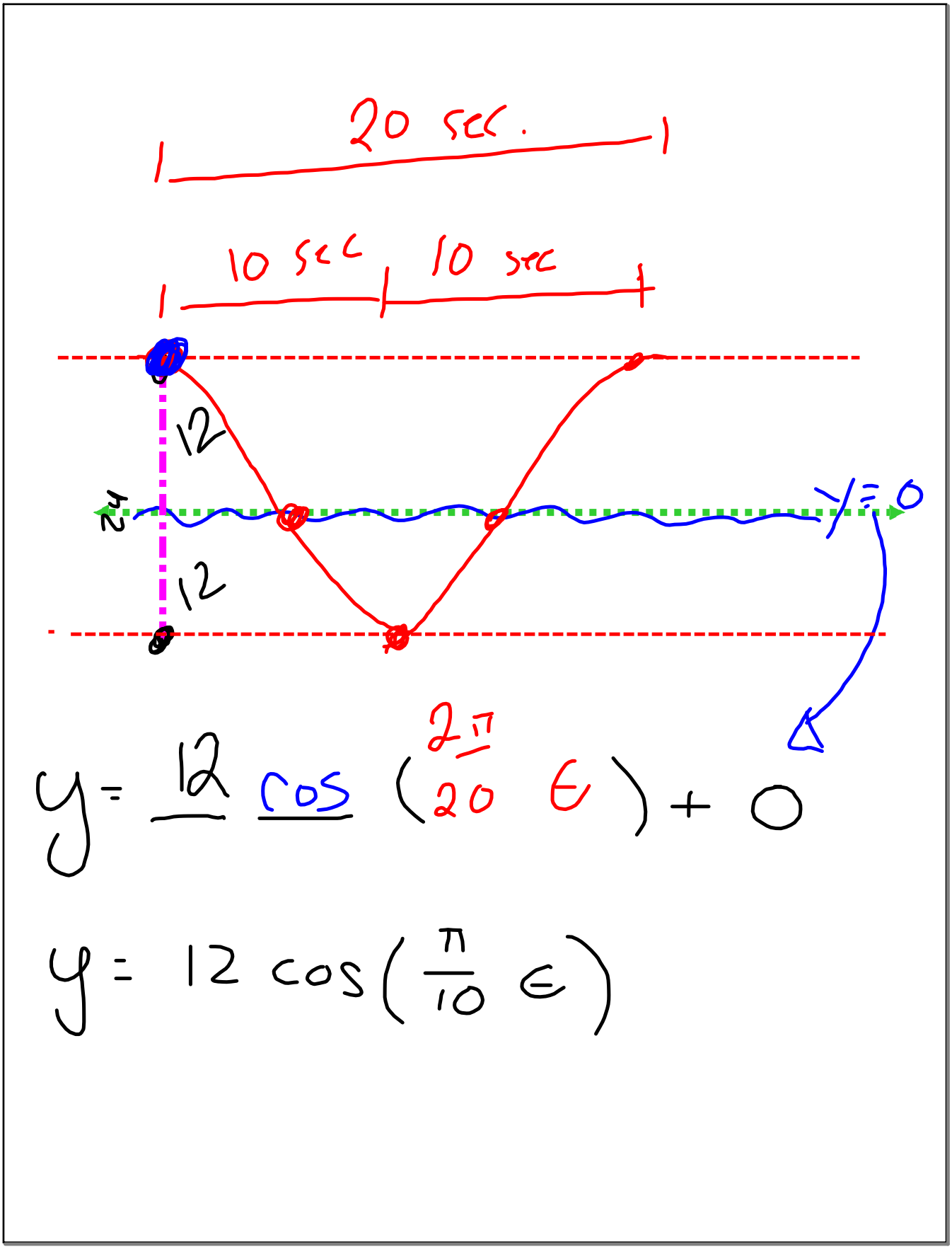
$$y = -50 \cos\left(\frac{2\pi}{15}\theta\right) + 60$$

Oct 28-10:44 AM

Modeling -- Sine & Cosine Functions

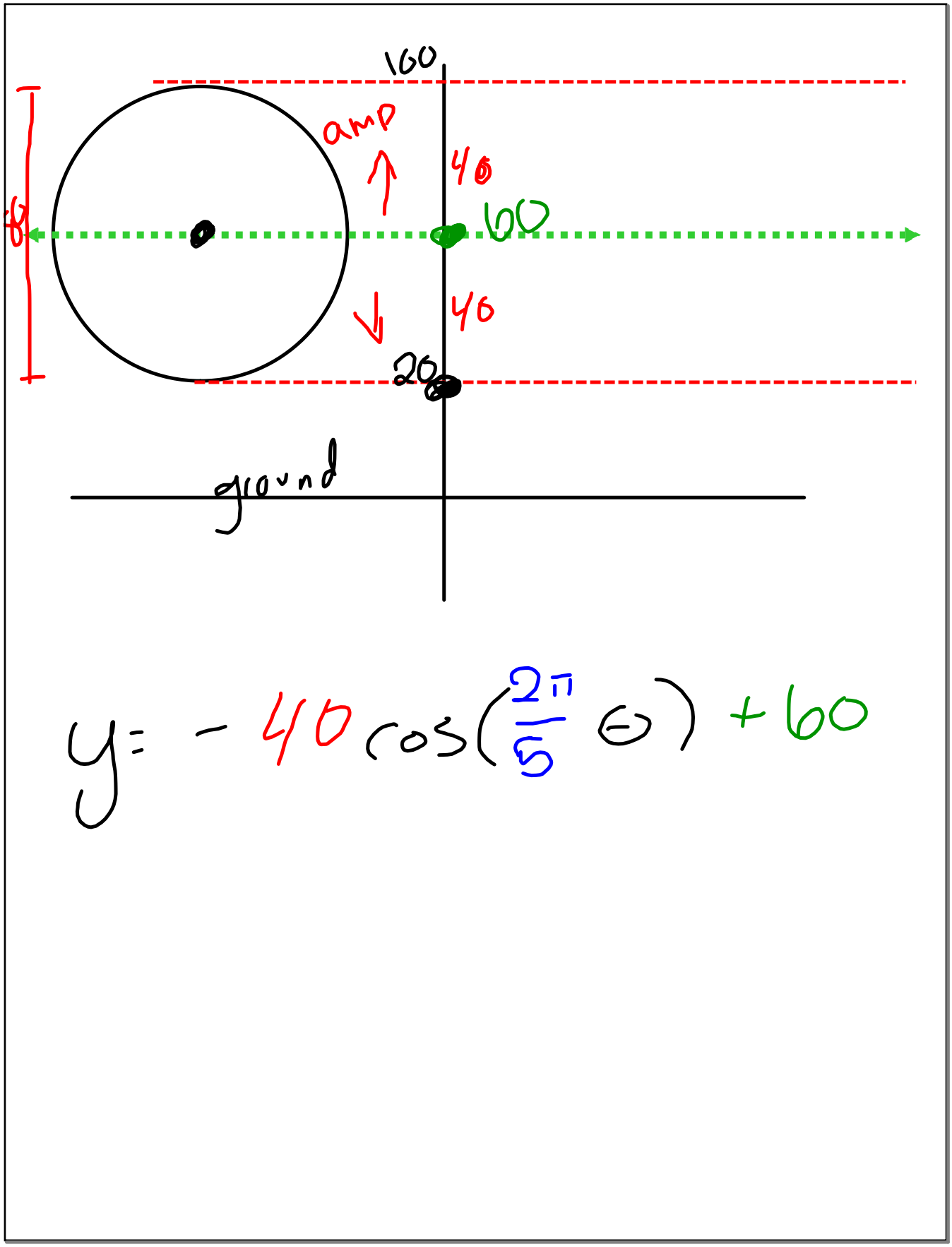
A water bottle is floating in the ocean and travels 24 cm from top amplitude to bottom amplitude in 10 seconds, and then back to the top amplitude in 10 seconds. Write the equation that will model the path of the water bottle.

Oct 28-7:08 AM


20 sec.
10 sec
10 sec
12
24
12
y = 0
y = 12 cos (2π/20 t) + 0
y = 12 cos (π/10 t)

Ferris Wheel has a max height of 100 ft and is 20 feet off the ground. Write the equation that models the ferris wheel if it rotest every 5 minutes starting at the bottom.

Oct 28-10:08 AM



$$y = -40\cos\left(\frac{2\pi}{5}\theta\right) + 60$$