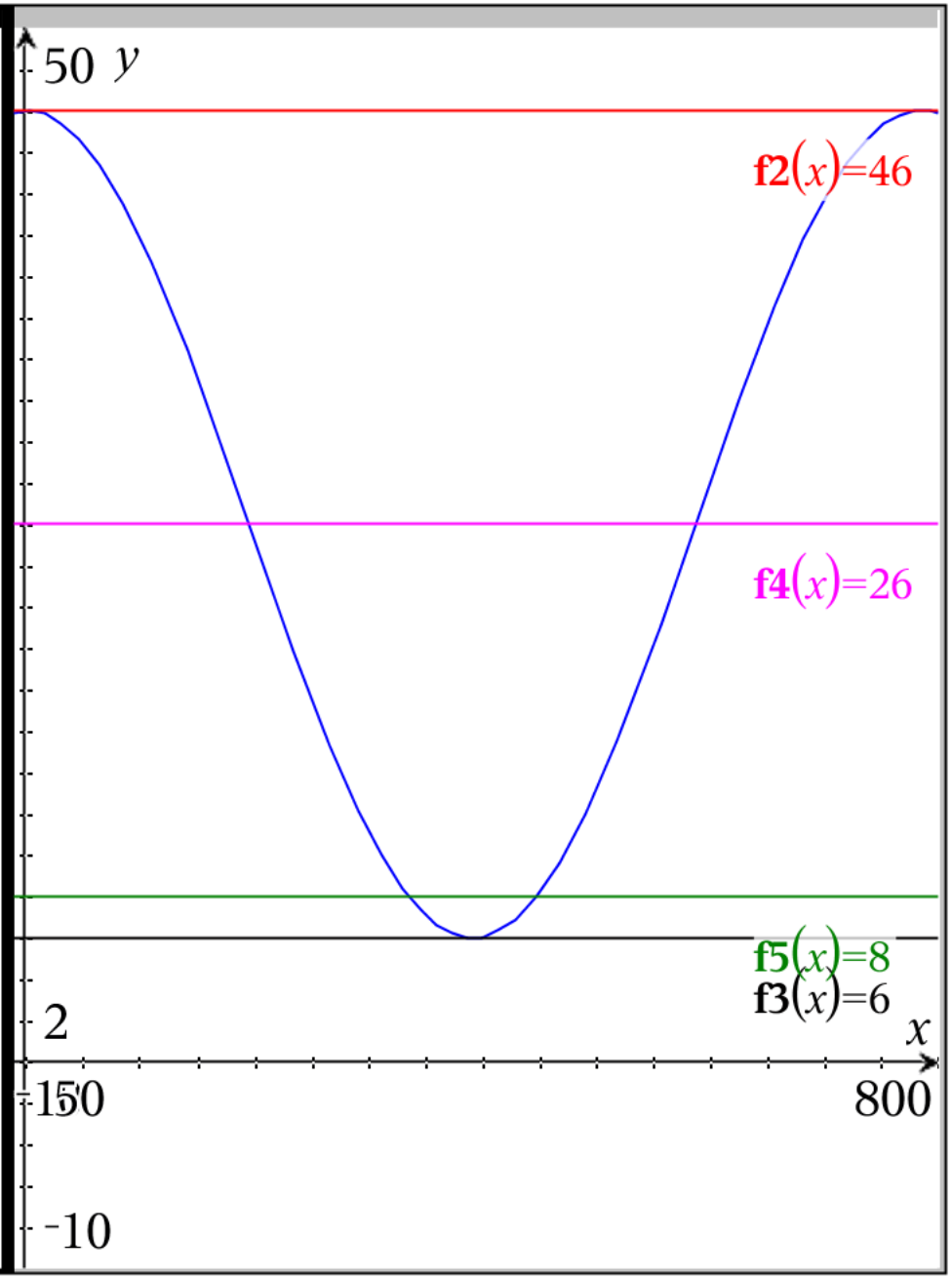
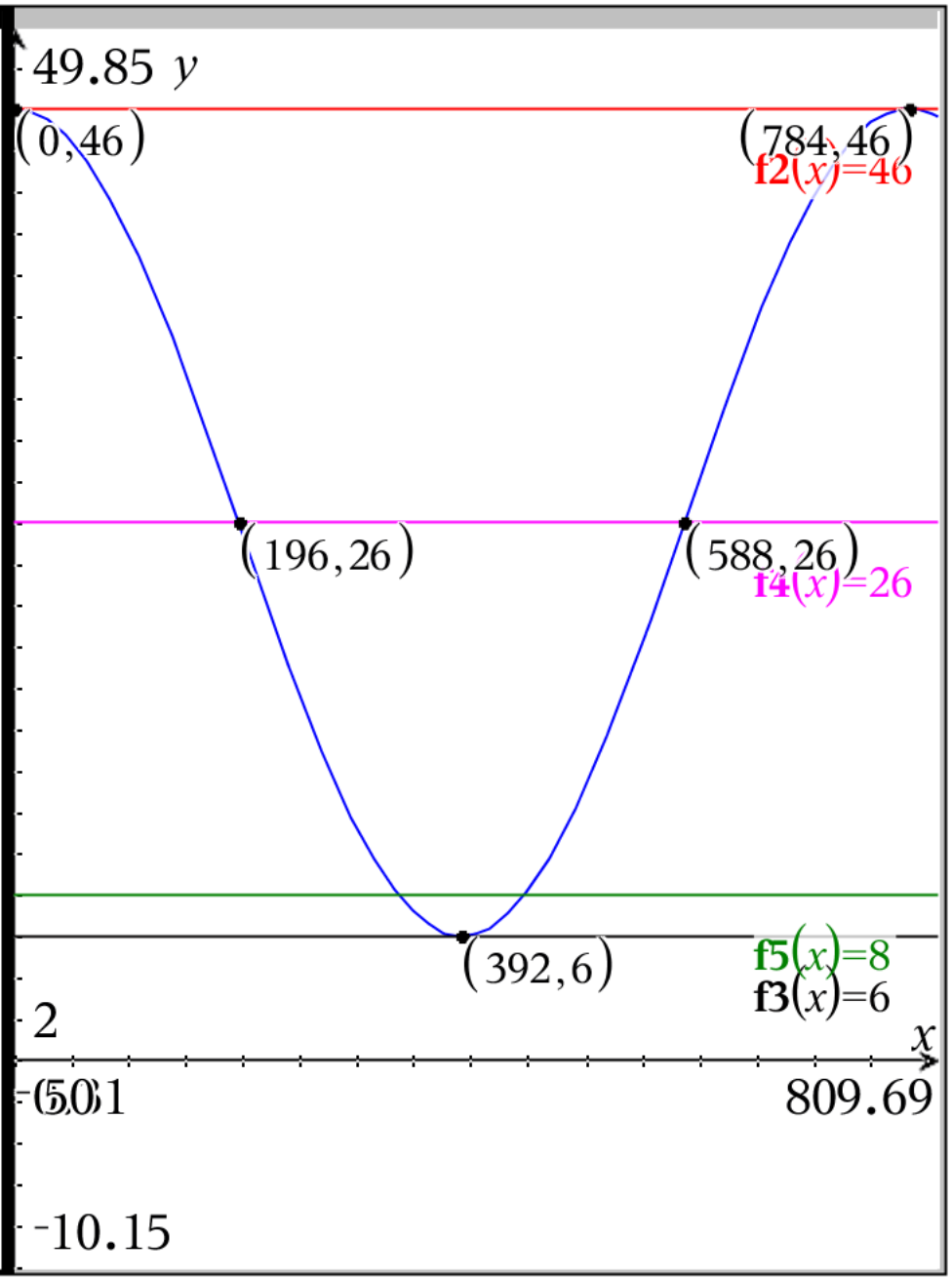
model for #1

$$y=20\cdot\cos\left(\frac{2\cdot\pi}{784}\cdot x\right)+26$$



model for #1

$$y=20\cdot\cos\left(\frac{2\cdot\pi}{784}\cdot x\right)+26$$



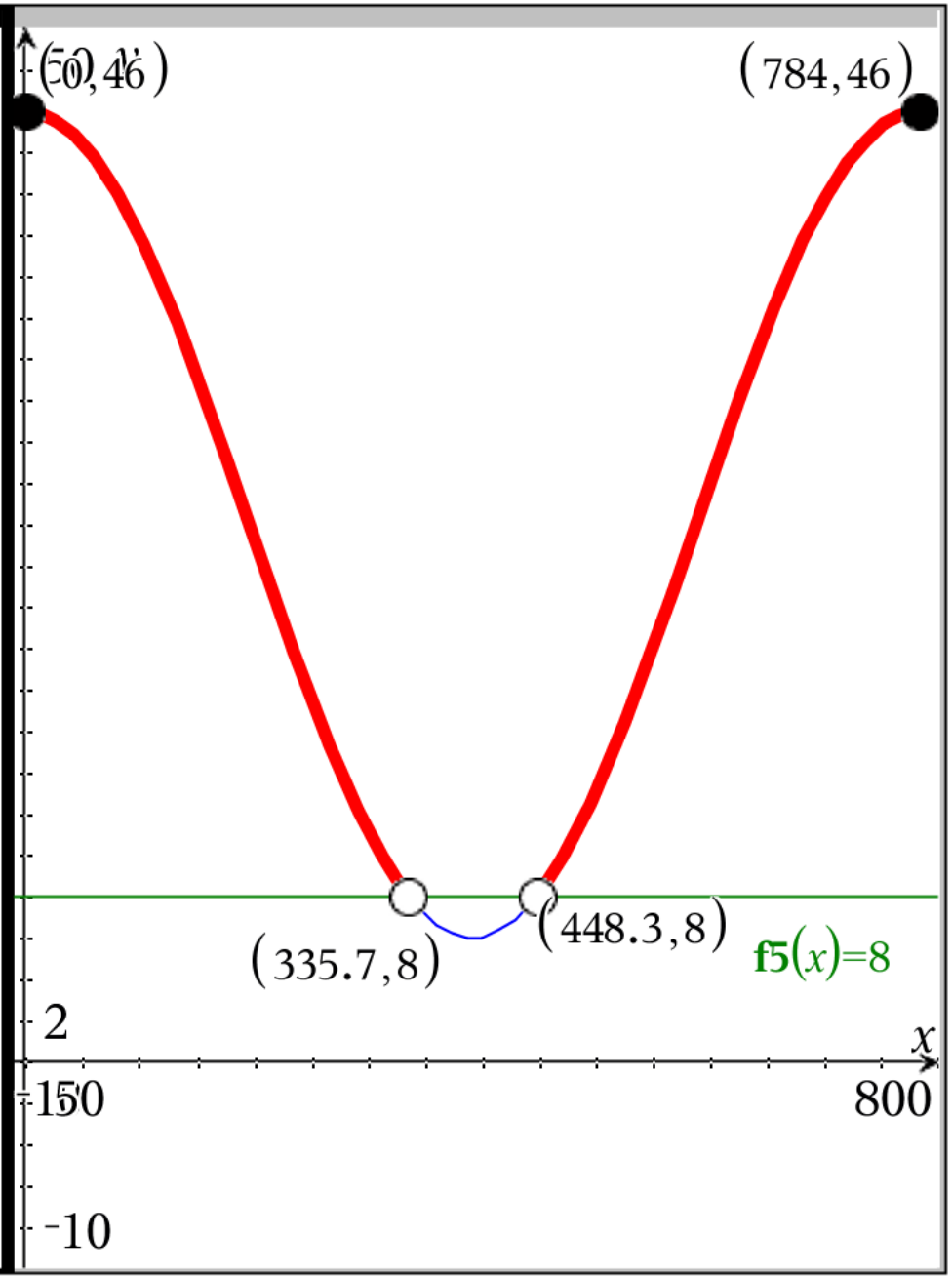
model for #1

$$y=20\cdot\cos\left(\frac{2\cdot\pi}{784}\cdot x\right)+26$$

This Ferris wheel is above 8 meters when

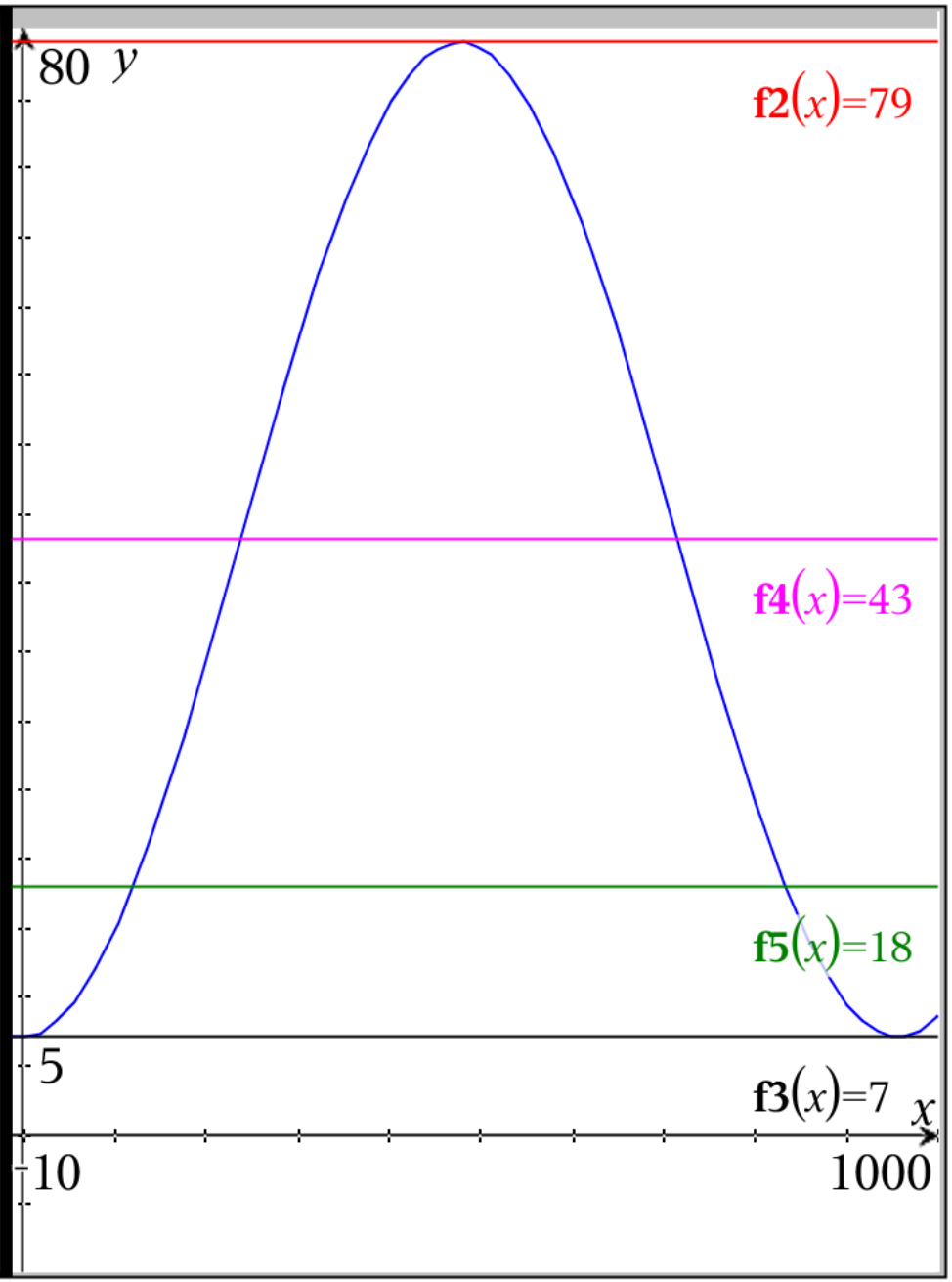
[0,335.7) or (448.3,784]

(assuming we only want to know about first period)



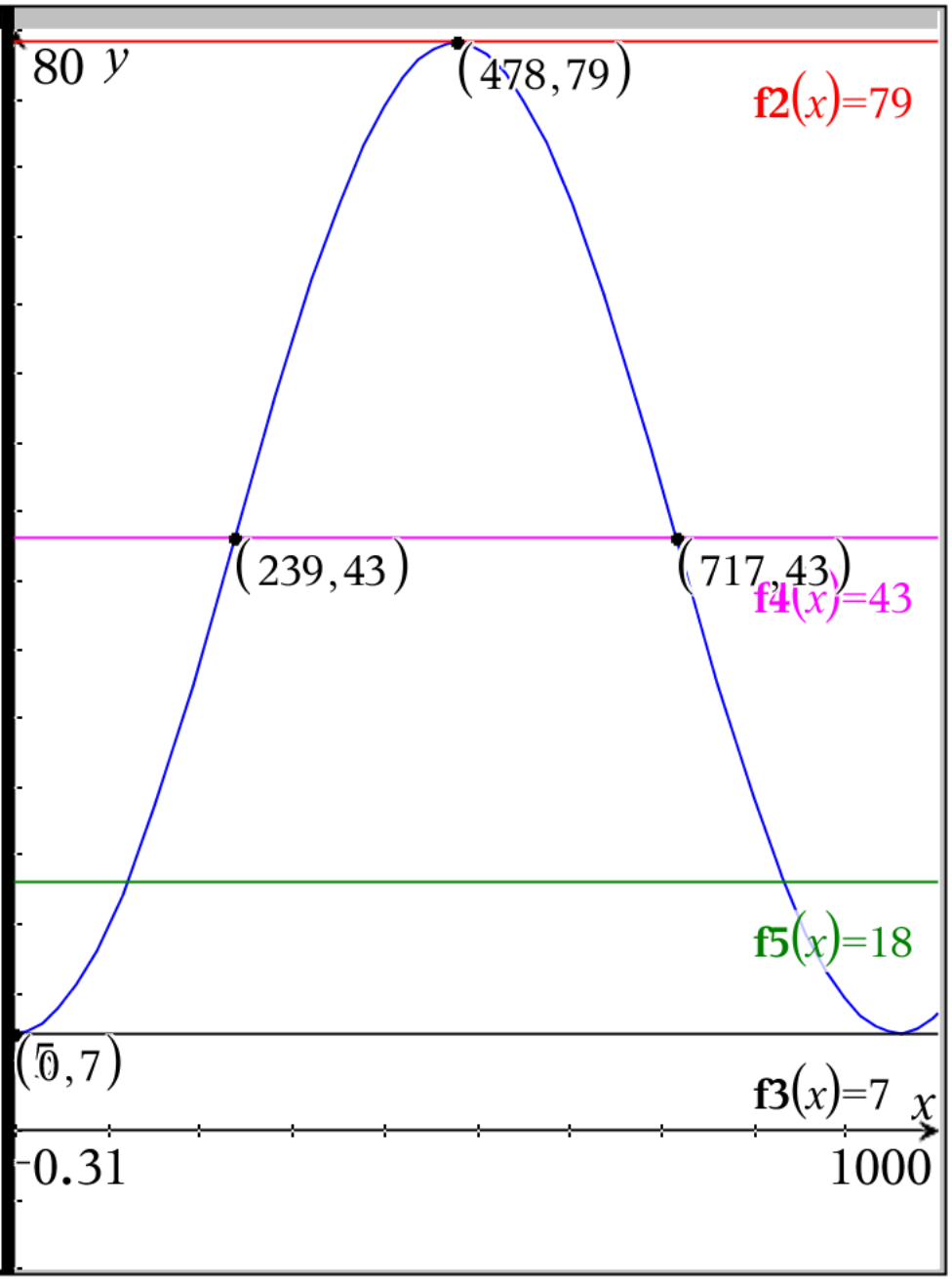
model for #1

$$y=-36\cdot\cos\left(\frac{2\cdot\pi}{956}\cdot x\right)+43$$



model for #3

$$y=-36\cdot\cos\left(\frac{2\cdot\pi}{956}\cdot x\right)+43$$



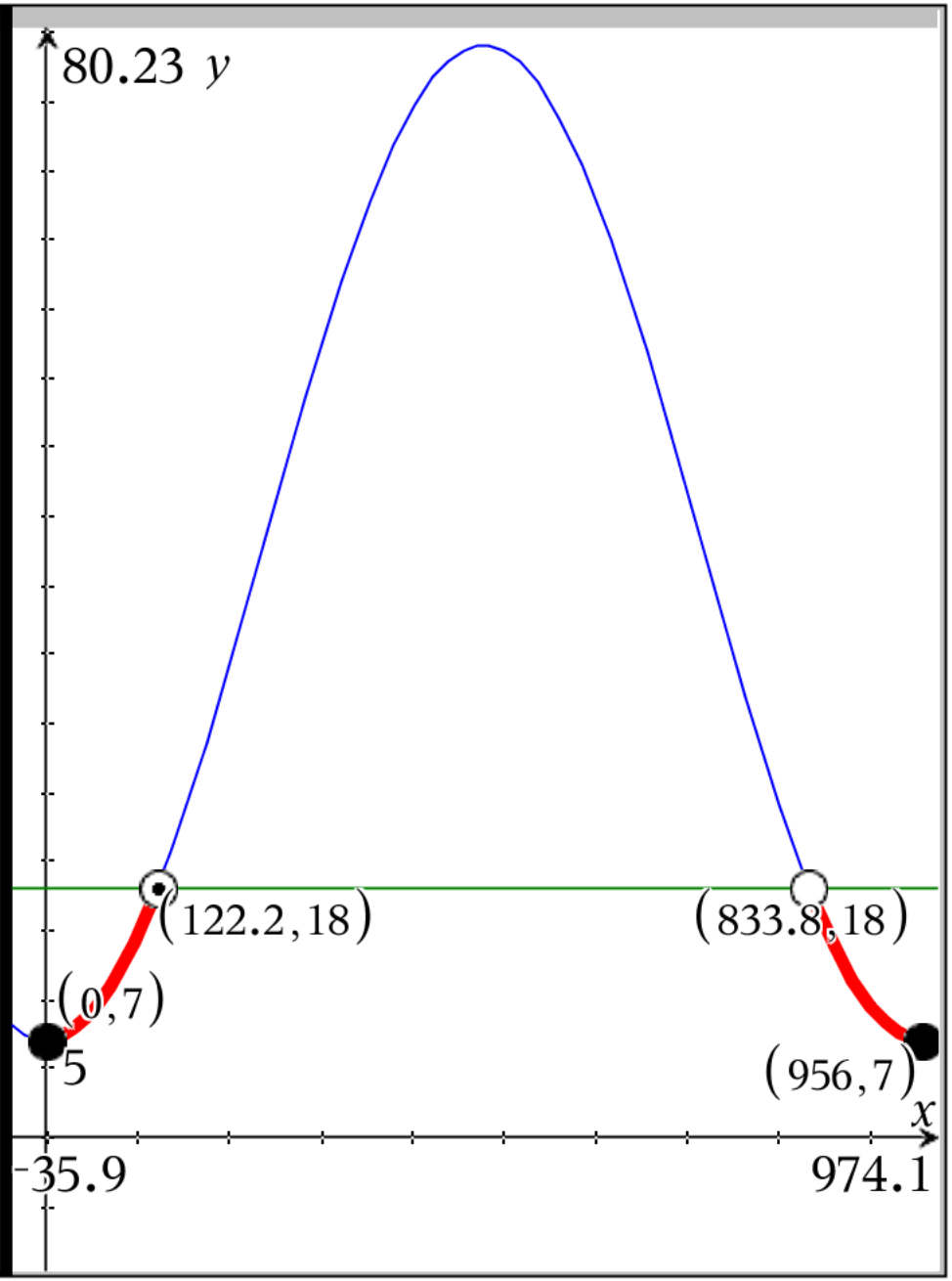
model for #3

$$y=-36\cdot\cos\left(\frac{2\cdot\pi}{956}\cdot x\right)+43$$

This Ferris wheel is below 18 meters when

[0,122.2) or (833.8,956]

(assuming we only want to know about first period)

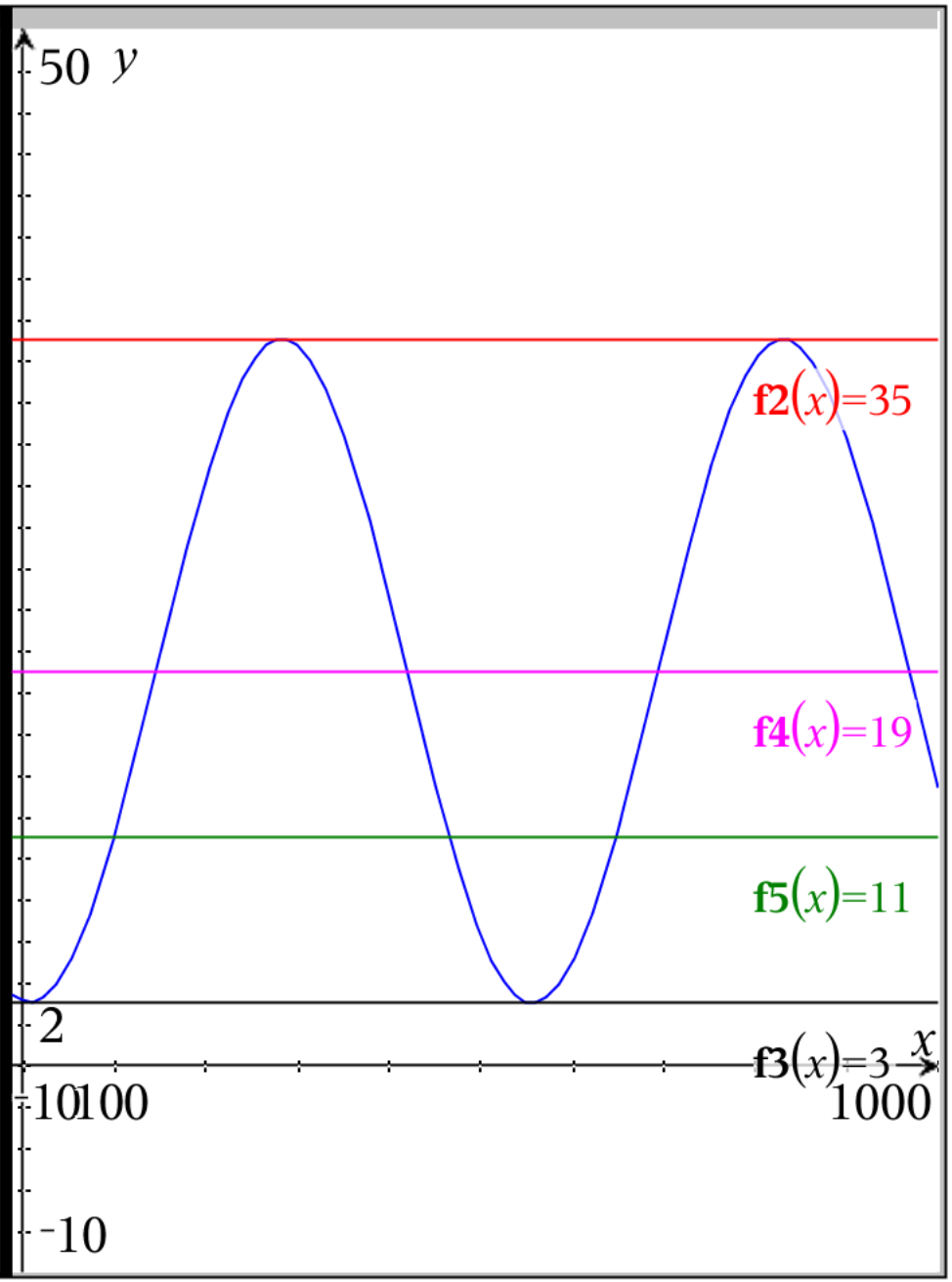


model for #5

$$y=16\cdot\sin\left(\frac{2\cdot\pi}{548}\cdot(x+\text{shift})\right)+19$$

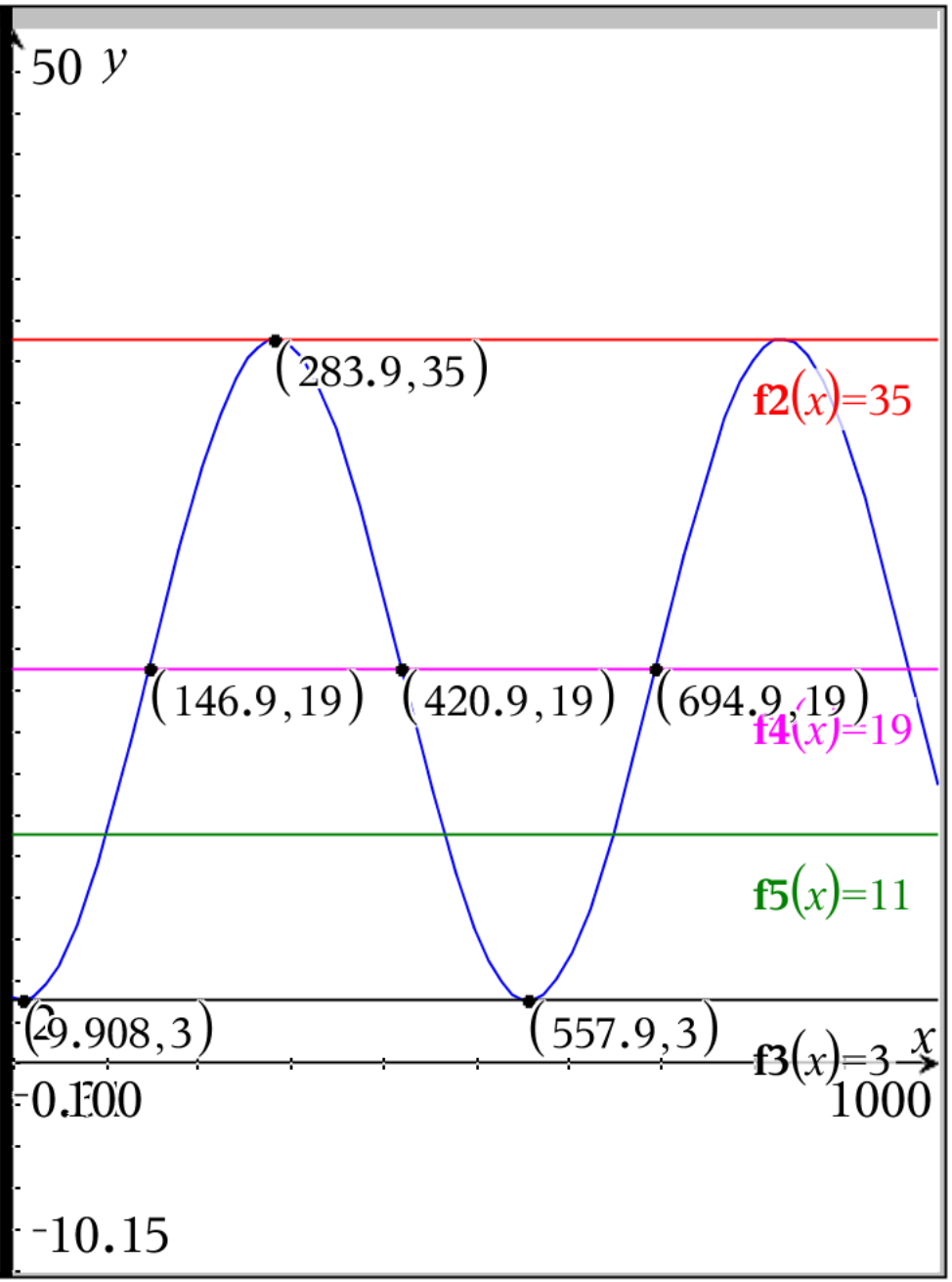
$$\text{shift}=\frac{548}{2\cdot\pi}\cdot\sin^{-1}\left(\frac{11-19}{16.}\right)\blacktriangleright -45.6667$$

$$y=16\cdot\sin\left(\frac{2\cdot\pi}{548}\cdot x-45.6667\right)+19$$



model for #3

$$y=16\cdot\sin\left(\frac{\pi\cdot x}{274}-45.6667\right)+19$$



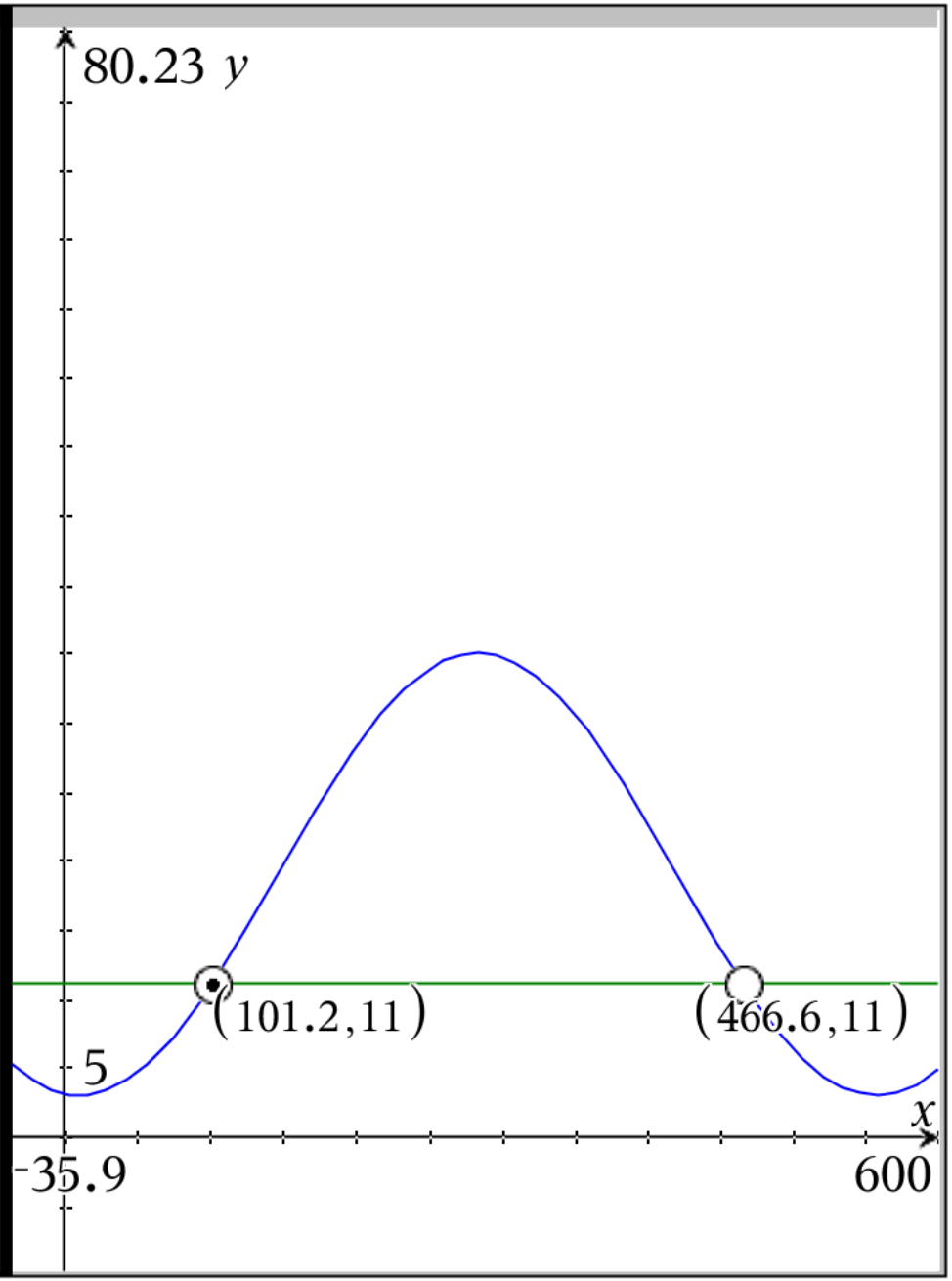
model for #5

$$y=16\cdot\sin\left(\frac{\pi\cdot x}{274}-45.6667\right)+19$$

This Ferris wheel at 12 meters on the way up when

x=101.2

(assuming we only want to know about first period)

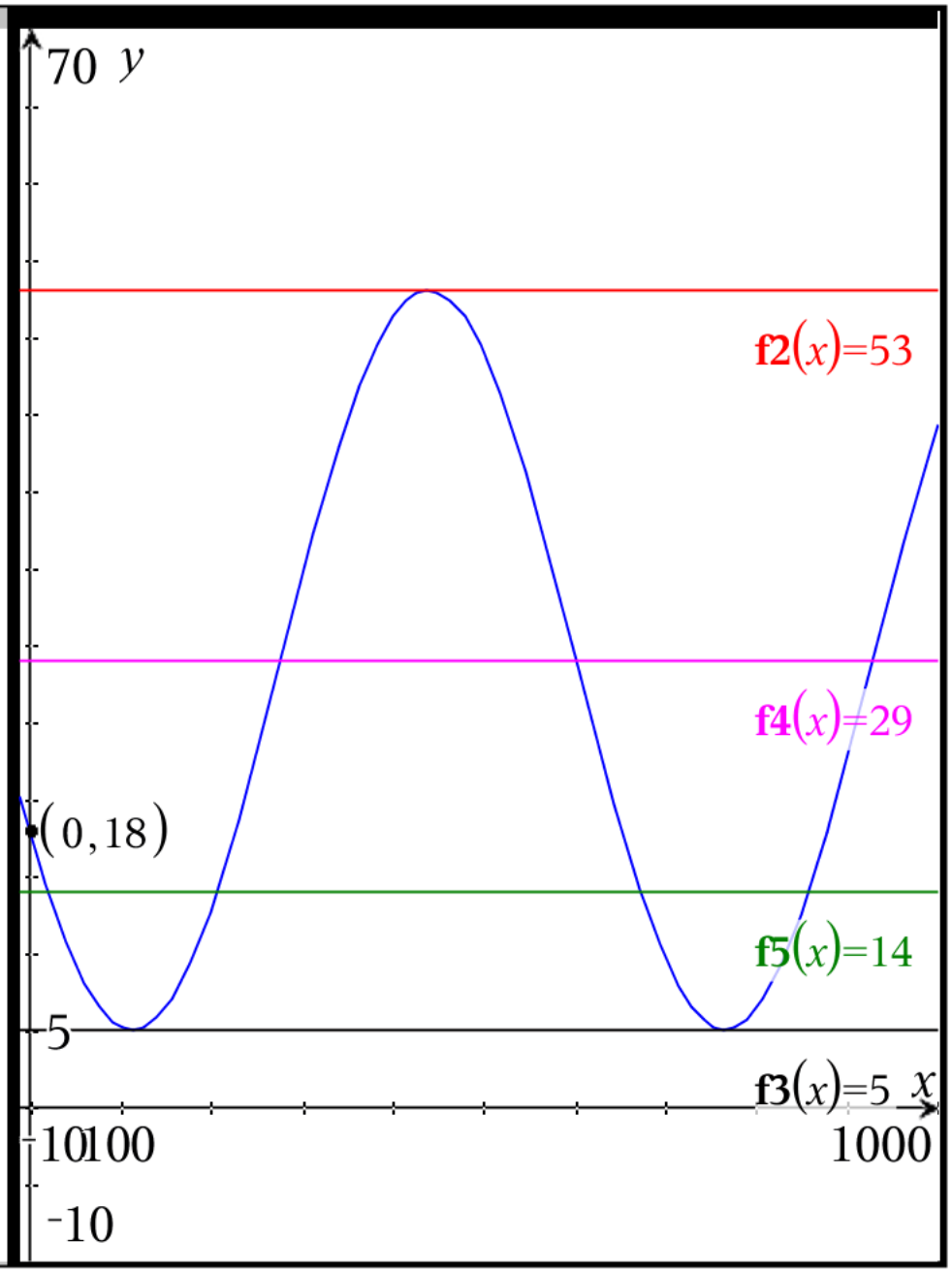


model for #7

$$y=-24\cdot\sin\left(\frac{2\cdot\pi}{652}\cdot(x+\text{shift})\right)+29$$

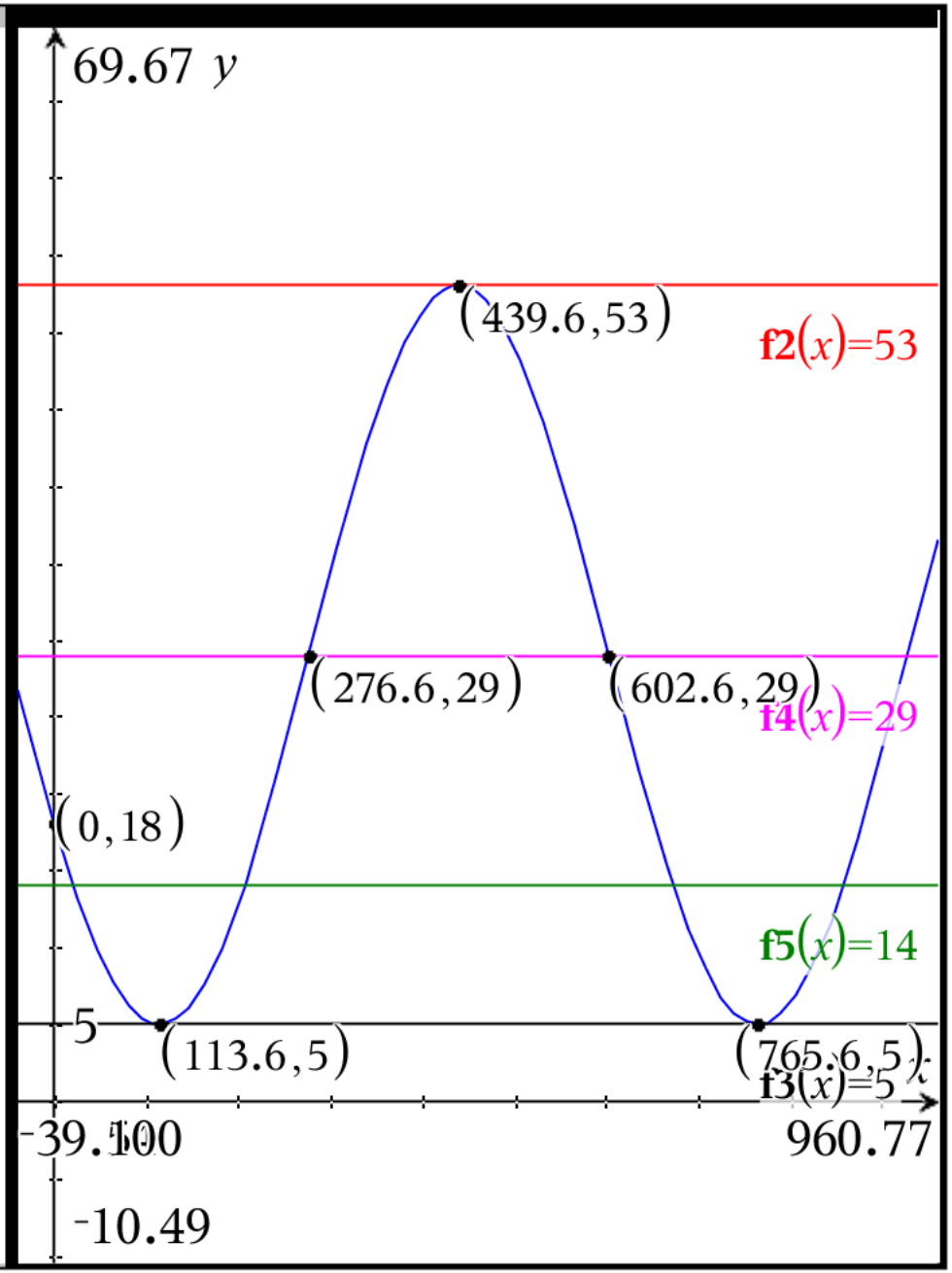
$$\text{shift}=\frac{652}{2\cdot\pi}\cdot\sin^{-1}\left(\frac{18-29}{-24.}\right)\blacktriangleright 49.4064$$

$$y=-24\cdot\sin\left(\frac{2\cdot\pi}{652}\cdot(x+49.4064)\right)+29$$



model for #3

$$y=-24\cdot\sin\left(\frac{2\cdot\pi}{652}\cdot(x+\text{shift})\right)+29$$



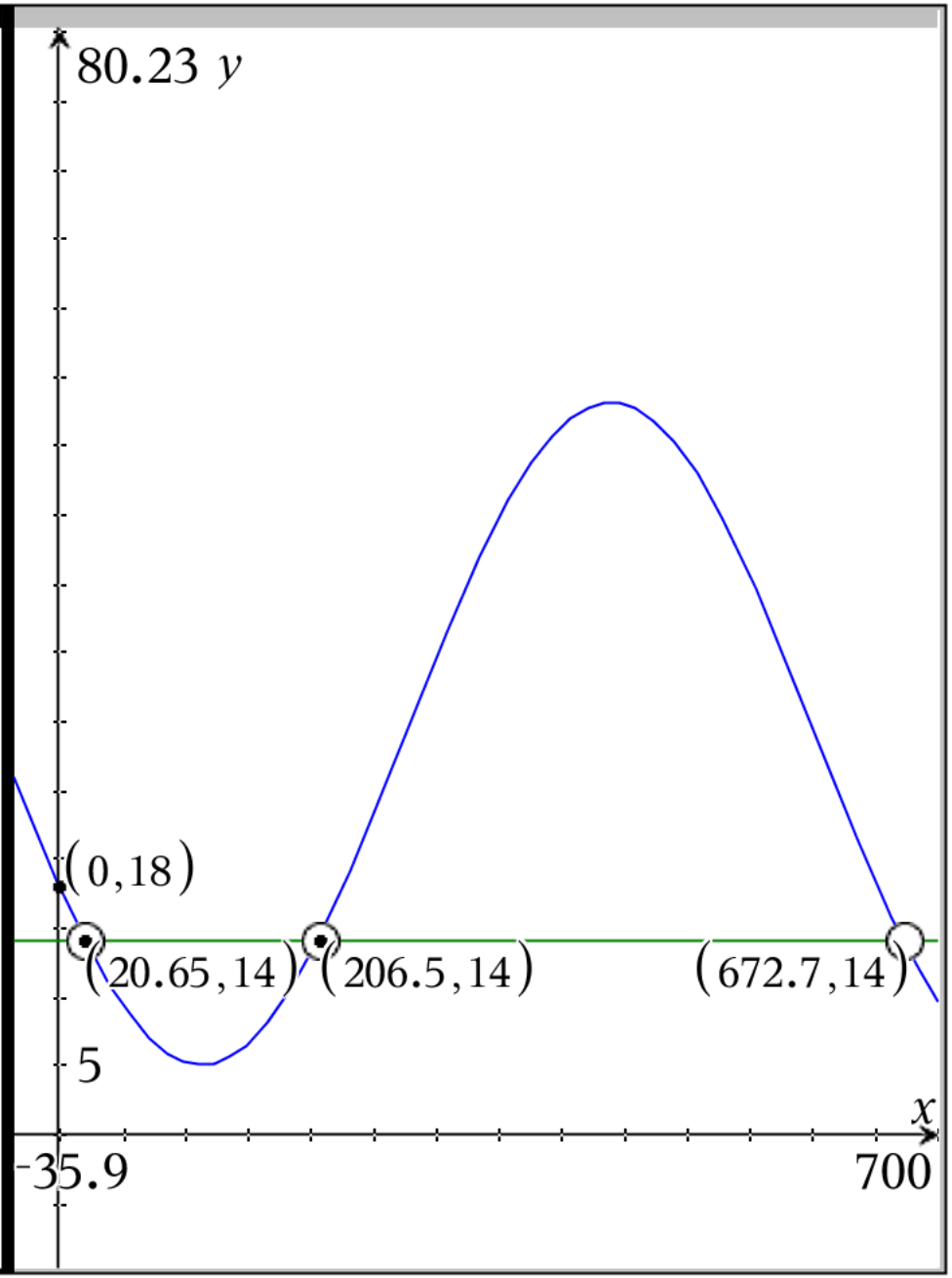
model for #5

$$y=-24\cdot\sin\left(\frac{2\cdot\pi}{652}\cdot(x+\text{shift})\right)+29$$

This Ferris wheel at 14 meters on the way down when

x=20.65 or x=672.7

(assuming we only want to know about first period)



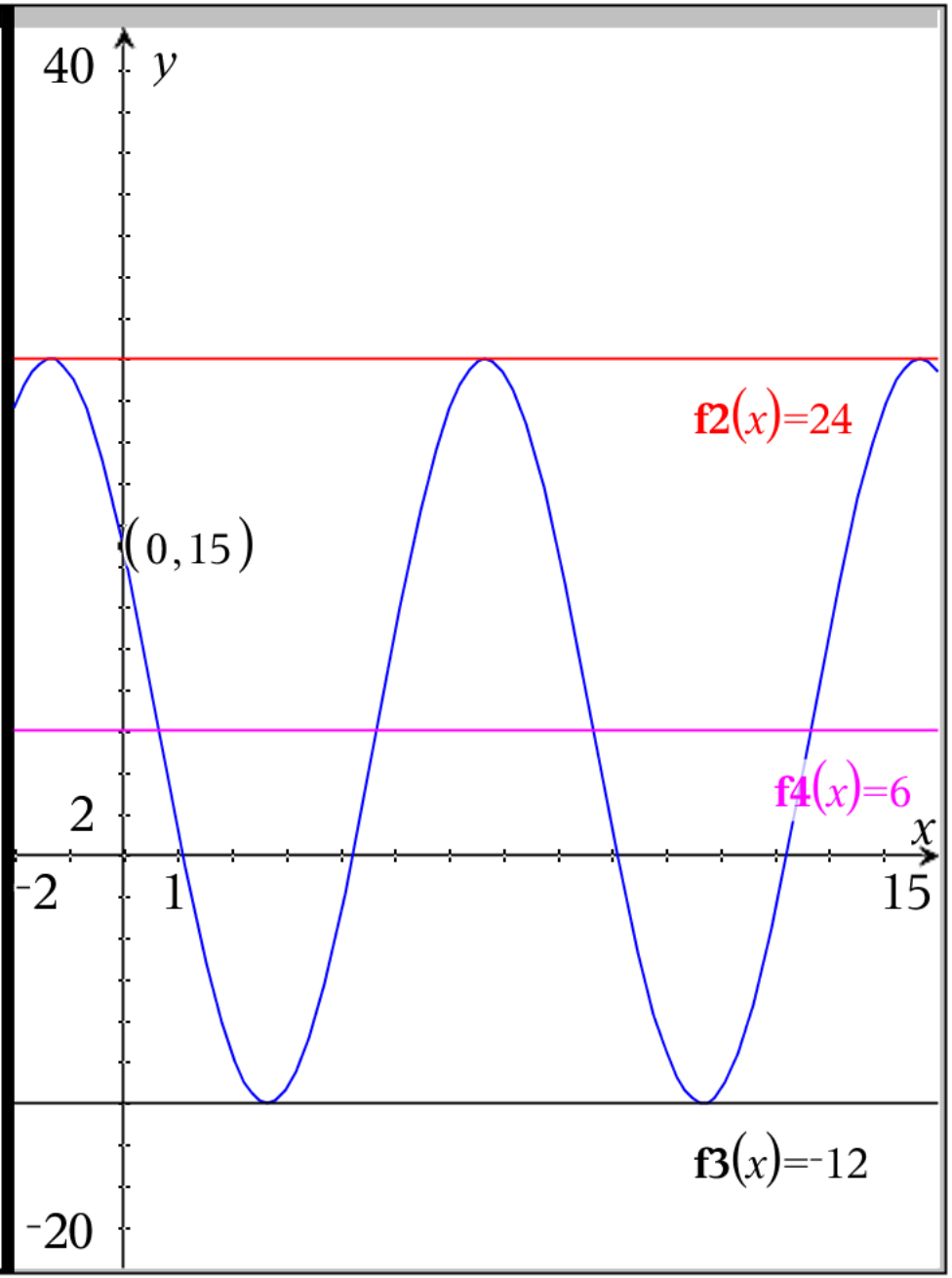
model for #9

$$\frac{24+12}{2} \blacktriangleright 18 \qquad \frac{24+-12}{2} \blacktriangleright 6$$

$$y=-18\cdot\sin\left(\frac{2\cdot\pi}{8}\cdot(x+\text{shift})\right)+6$$

$$\text{shift}=\frac{8}{2\cdot\pi}\cdot\sin^{-1}\left(\frac{15-6}{-18.}\right) \blacktriangleright -0.666667$$

$$y=-18\cdot\sin\left(\frac{2\cdot\pi}{8}\cdot(x-0.667)\right)+6$$



model for #3

$$y=-18\cdot\sin\left(\frac{2\cdot\pi}{8}\cdot(x-0.667)\right)+6$$

Since model starts at 8:00AM

and high tide is 6.667 hours after start of model

$0.667\cdot 60 \blacktriangleright 40.02$

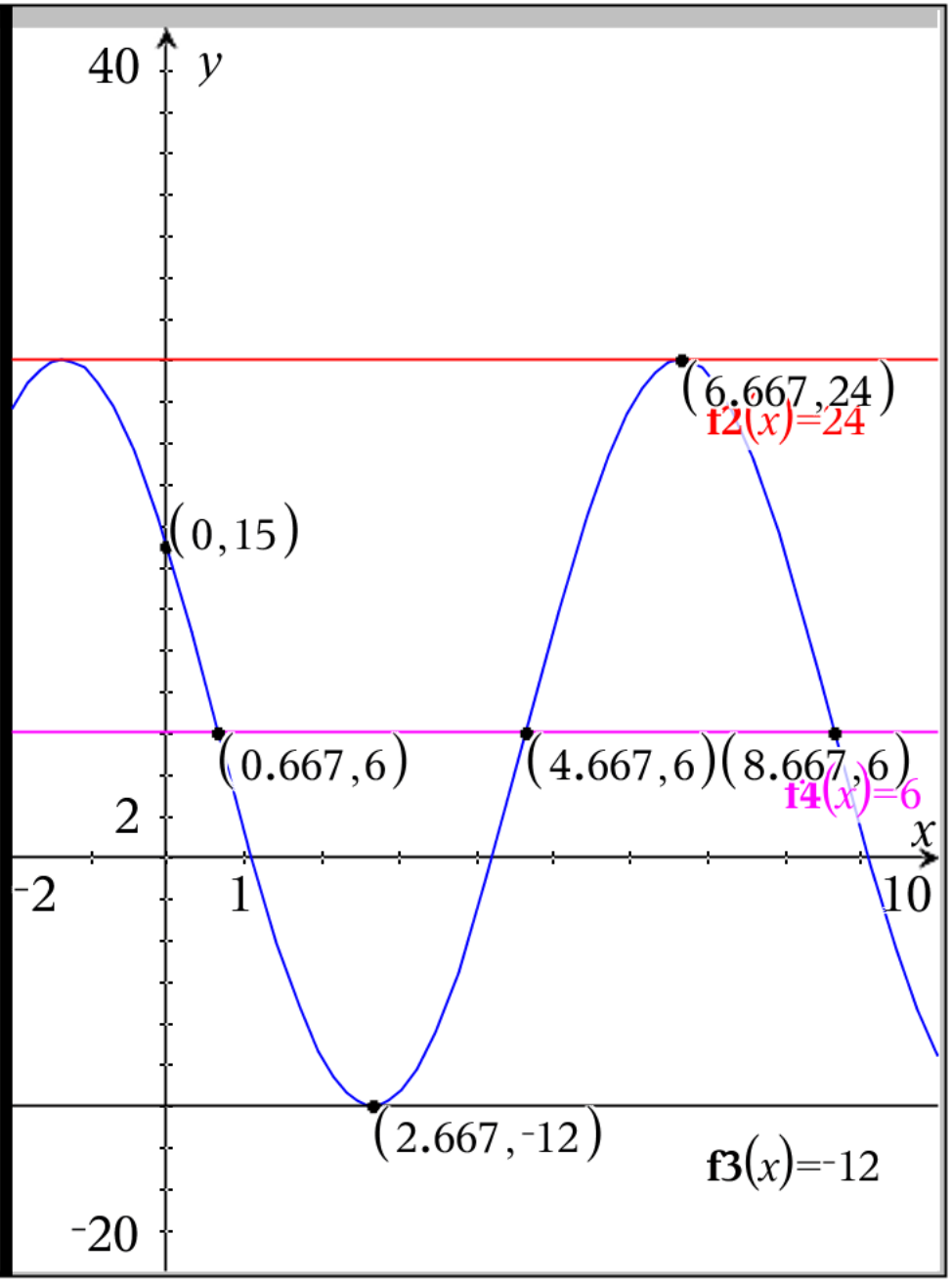
we can say high time occurs at 6 hours and 40 minutes after 8:00AM or 2:40PM

Since model starts at 8:00AM

and low tide is 2.667 hours after start of model

$0.667\cdot 60 \blacktriangleright 40.02$

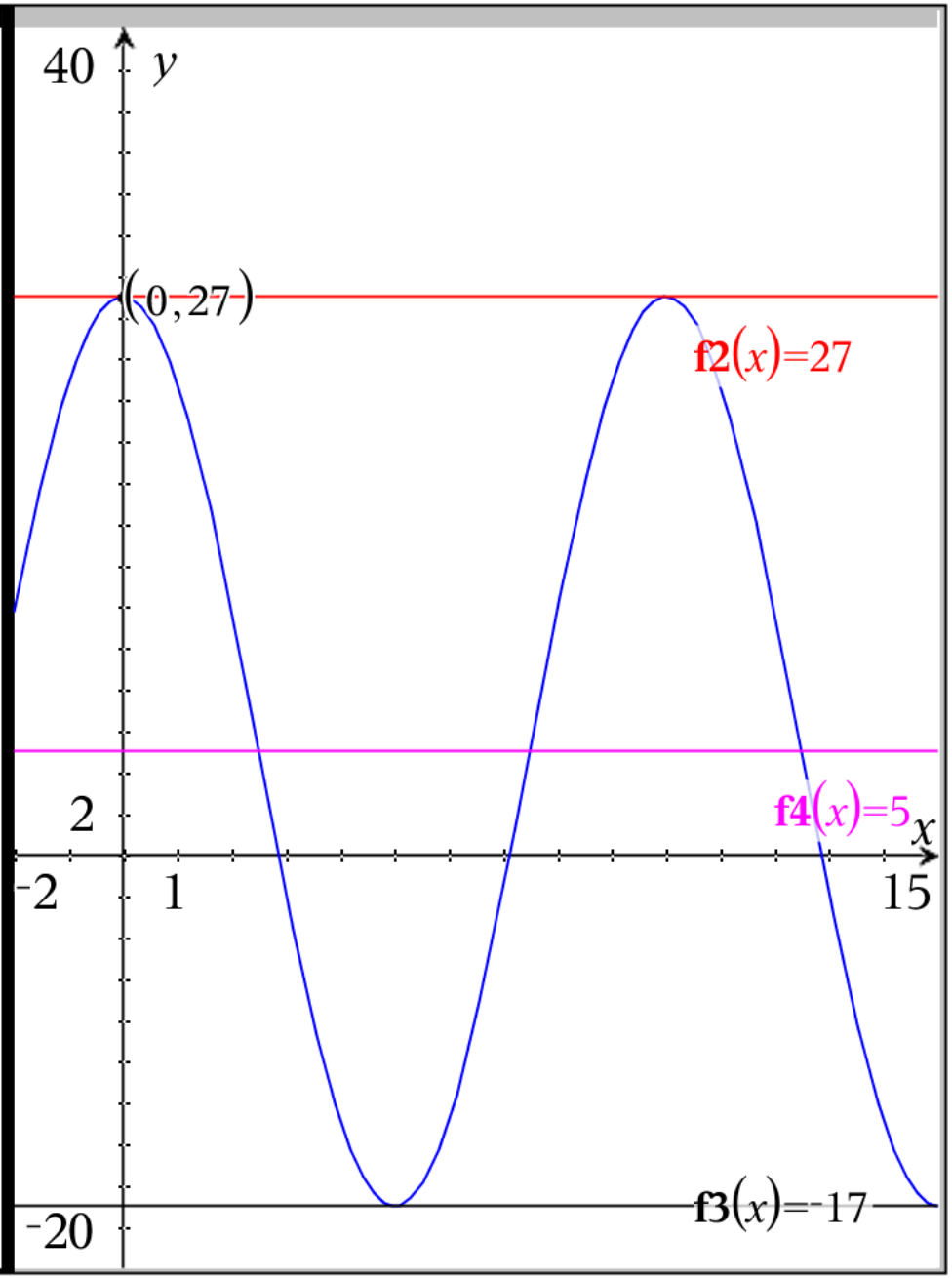
we can say low time occurs at 2 hours and 40 minutes after 8:00AM or 10:40AM



model for #11

$\frac{27+17}{2} \blacktriangleright 22 \quad \frac{27+-17}{2} \blacktriangleright 5$

$y=22\cdot\cos\left(\frac{2\cdot\pi}{10}\cdot(x)\right)+5$



model for #13

$$y=22\cdot\cos\left(\frac{2\cdot\pi}{10}\cdot(x)\right)+5$$

Since model starts at 9:00AM

10:00AM is x = 1

12:00PM is x = 3

4:00PM is x = 7

10:00PM is x = 13

$f1(1.) \blacktriangleright 22.7984$

$f1(3.) \blacktriangleright -1.79837$

$f1(7.) \blacktriangleright -1.79837$

$f1(13.) \blacktriangleright -1.79837$