

$$\text{Half Period} = \frac{1}{60} - \frac{1}{120}$$

$$= \frac{2-1}{120}$$

$$= \frac{1}{120}$$

$$\text{Full Period} = \frac{1}{120} \cdot \frac{2}{1}$$

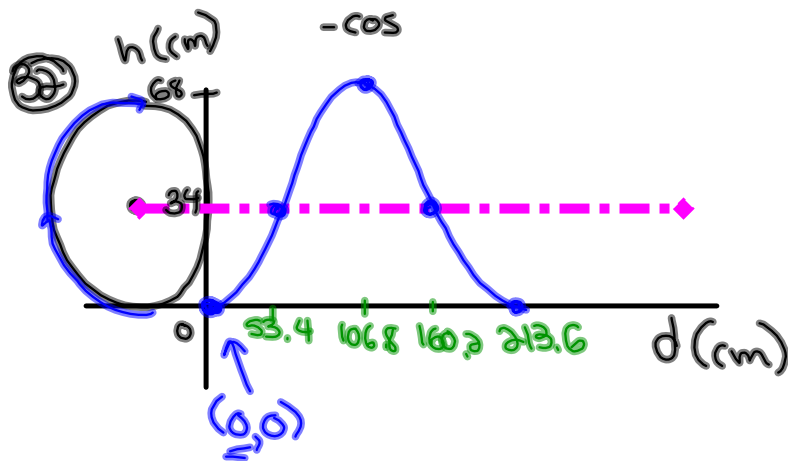
$$= \frac{2}{120}$$

$$= \frac{1}{60}$$

$$a) y = -4.5 \cos\left[21600\left(x - \frac{1}{120}\right)\right]$$

$$b) y = -4.5 \cos\left[21600\left(4 - \frac{1}{120}\right)\right]$$

$$y = 4.5 \text{ A}$$



min = 0  
max = 68

$D = 34$

$A = 34$

$C = 0$

$P = 213.63 \text{ cm}$

$k = 1.685$

\* To Find Period  
Find Circumference

$$C = \pi d$$

$$= \pi(68)$$

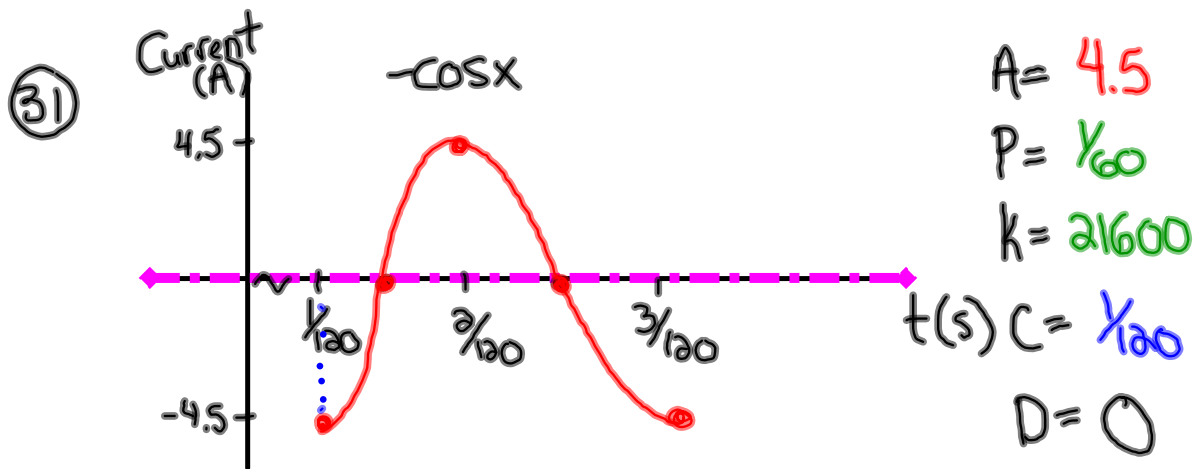
$$= 213.63$$

a)  $y = -34 \cos[1.685(x)] + 34$

b)  $y = -34 \cos[1.685(150)] + 34$

$y = 44.08 \text{ cm}$

## Questions from Homework



$$y = -4.5 \cos \left[ 21600 \left( x - \frac{1}{120} \right) \right]$$

$$y = -4.5 \cos \left[ 21600 \left( 4 - \frac{1}{120} \right) \right]$$

$$y = 4.5$$

$$\begin{aligned}
 \textcircled{32} \quad \text{Period} &= \text{Circumference} \\
 &= \pi d \\
 &= \pi (68) \\
 &= 213.64 \text{ cm}
 \end{aligned}$$

$$P = 213.64$$

$$K = 1.685$$

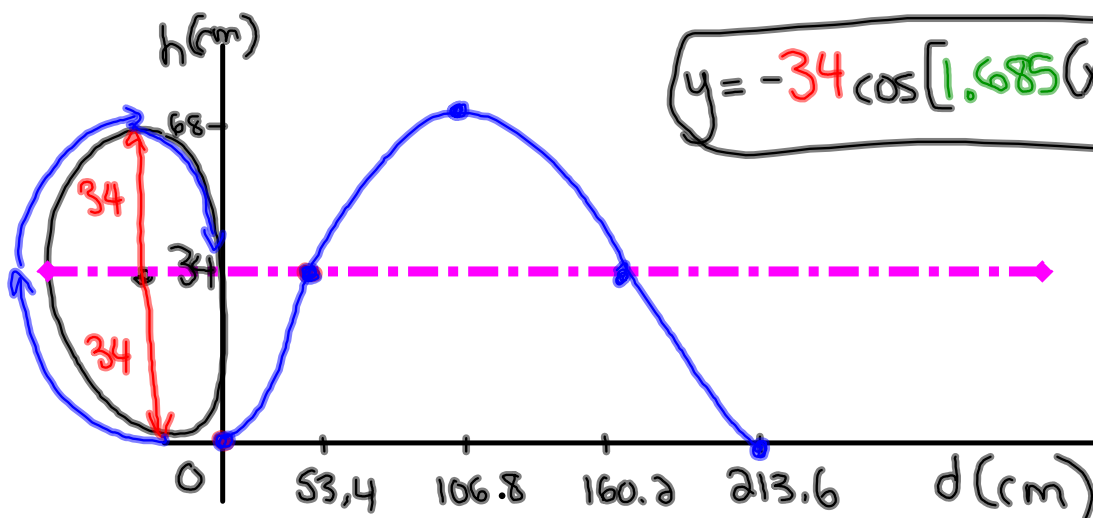
$$A = 34$$

$$\text{local min} = 0$$

$$\text{local max} = 68$$

$$D = 34$$

$$C = 0$$



$$\begin{aligned}
 \text{(ii)} \quad y &= -34 \cos[1.685(150)] + 34 \\
 &= 44.08 \text{ cm}
 \end{aligned}$$

Graph the following equation!  $(x,y) \rightarrow (\frac{x}{k} + C, Ay + D)$

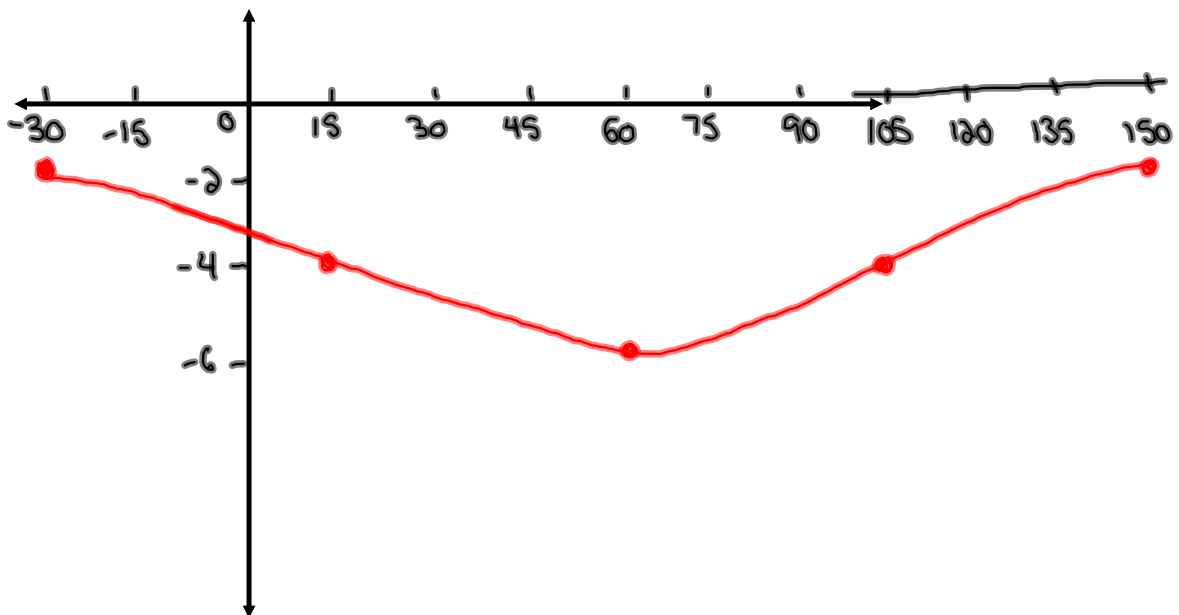
$$\begin{aligned} \cdot \frac{2(y+3)}{2} &= \frac{4 \cos[2(x+30)] - 2}{2} \\ \cdot y+3 &= 2 \cos[2(x+30)] - 1 \\ y &= 2 \cos[2(x+30)] - 4 \end{aligned}$$

$$\begin{aligned} A &= 2 & C &= -30 \\ k &= 2 & D &= -4 \\ P &= 180 \end{aligned}$$

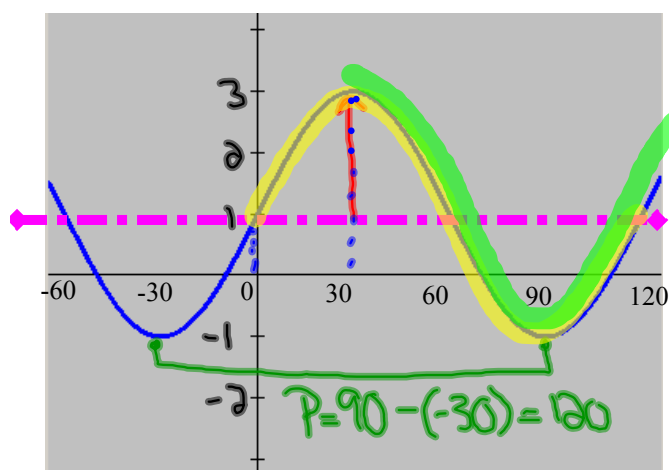
$$y = \cos x$$

x	y
0	1
90	0
180	-1
270	0
360	1

x	y
-30	-2
15	-4
60	-6
105	-4
150	-2



Find 2 equations to represent the following graph:



$$A = 2$$

$$P = 120$$

$$k = 3$$

$$D = 1$$

$$+ \sin (C = 0)$$

$$y = 2 \sin [3(x)] + 1$$

$$+ \cos (C = 30)$$

$$y = 2 \cos [3(x - 30)] + 1$$

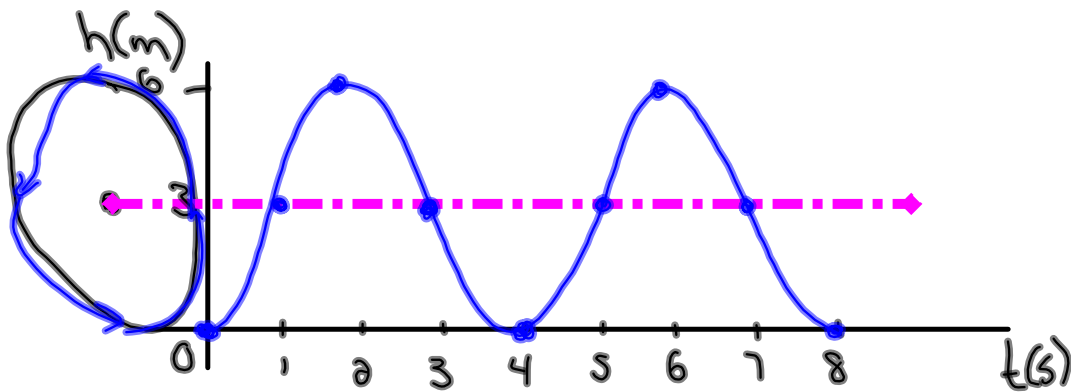
## Functions Review

$$\textcircled{1} \quad a = 3\text{m} \quad \text{min} = 0\text{m} \quad \text{max} = \text{min} + \text{diameter}$$

$$\text{max} = 0 + 6 = 6\text{m}$$

$$d = \text{min} + \text{radius} \quad P = 4\text{s} \quad b = \frac{360}{4} = 90$$

$$d = 0 + 3 = 3\text{m}$$



$$c) \quad y = -3\cos[90(x)] + 3$$

$$y = -3\cos[90(6.5)] + 3$$

$$y = 5.12\text{m}$$

$$d) \quad y = -3\cos[90(x)] + 3$$

$$5 = -3\cos[90(x)] + 3$$

$$2 = -3\cos[90(x)]$$

$$-0.\bar{6} = \cos[90x]$$

$$\cos^{-1}(-0.\bar{6}) = 90x$$

$$131.8 = 90x$$

$$1.46\text{ s} = x$$