

2. [6 points] After escaping from a pirate ship and being stranded at sea for several days, mad scientist Kiki LeBlanc arrived at a desert island. On the island, the temperature is very predictable, and it can be modeled by a sinusoidal function which varies daily from a high of 90°F at 4pm to a low of 64°F at 4am. Find a formula for a sinusoidal function $T(h)$ that gives the temperature in $^\circ\text{F}$ on the island h hours after midnight on any given day.

$$T(h) = \underline{\hspace{15em}}$$

3. [6 points] Kiki eats lots of papayas and coconuts on the island when she's hungry. When she eats w pounds of papayas, she stays full for $P(w)$ hours. When she eats w pounds of coconuts, she stays full for $C(w)$ hours. Give practical interpretations of the following expressions:

- $C^{-1}(3) = 2$.

- $P^{-1}(C(4))$