9. [12 points]
   a. [6 points] While searching for cryptids, Roy claims he found a secret island with crazy thermodynamic properties. According to him, the temperature on the island fluctuates in a 24 hour cycle that can be modeled by a sinusoidal function. The maximum temperature of 45°Celsius occurs at 1 p.m. every day, and the minimum temperature of −25°Celsius occurs at 1 a.m. every day. Let the sinusoidal function \( C(t) \) be the temperature, in degrees Celsius, on the island \( t \) hours after 8 a.m. Find a formula for \( C(t) \).

   b. [6 points] On the island, Roy also claims to have found a population of the elusive Megaconda! In his notes, he writes that it is clear that the population size of Megaconda population must fluctuate in a sinusoidal manner, and that there are \( M(t) \) thousand Megacondas \( t \) months after his discovery. Let
   
   \[
   M(t) = 13 \sin \left( \frac{\pi t}{3} \right) + 25
   \]

   Find the first two times after Roy’s discovery when the Megaconda population is 18,000. Give your answers using exact form.