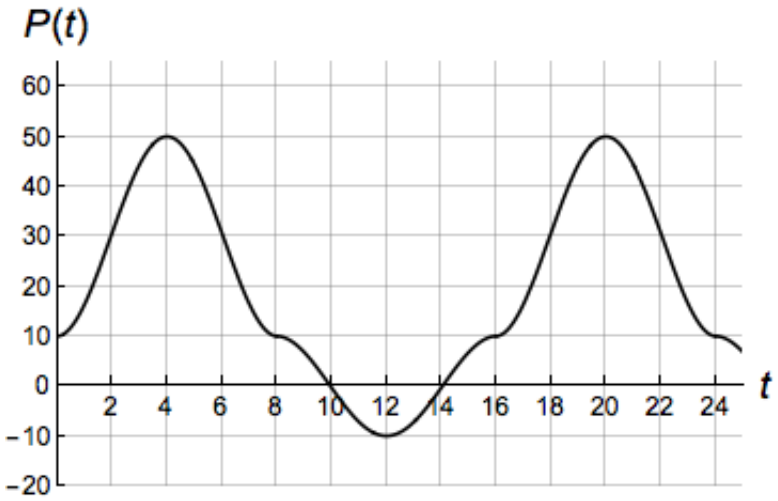
2. [11 points] Let $P(t)$ be the average temperature (in ^{0}F) in a small moon that rotates around a planet at time t (in hours). Suppose that $P(t)$ is a periodic function with period less than 20 hours. The graph of $y = P(t)$ is shown below



a. [2 points] Find the period of $P(t)$: _____

b. [2 points] Find the amplitude of the function $P(t)$: _____

c. [2 points] Find the equation of the midline of the function $P(t)$: _____

d. [3 points] What is the smallest value of t that satisfies $t > 24$ and $P(t) = 30$?

t= _____

e. [2 points] Let $k(t) = 2P(3t)$. What is the period of the function $k(t)$?

Answer: _____