Phase locking occurs when phase reset matches difference in periods of $\approx 4/5$. 

![Diagram of phase locking with labeled phases and time axis.]

(c) 

Graph showing phase, $\theta_n$, versus pulse number, $n$. 

Phase locking occurs when phase reset matches difference in periods.
Phase-locking is predicted by the PRC

Equilibrium is reached when if $\theta_{n+1} = \theta_n$. The phase-shift $\theta_{\text{lock}}$ at this fixed point is given by:

$$\theta_{\text{lock}} = \theta_{\text{lock}} + \text{PRC}[\theta_{\text{lock}}] + T_s - T \Rightarrow \text{PRC}[\theta_{\text{lock}}] = T - T_s$$
The slope of the PRC determines stability.

The fixed point is stable if $\theta_{n+1} > \theta_n$ when $\theta_n < \theta_{\text{lock}}$ and $\theta_{n+1} < \theta_n$ when $\theta_n > \theta_{\text{lock}}$.

This requires $\text{PRC}(\theta_n) > T - T_s$ when $\theta_n < \theta_{\text{lock}}$ and $\text{PRC}(\theta_n) < T - T_s$ when $\theta_n > \theta_{\text{lock}}$.

$$\theta_{n+1} = \theta_n + \text{PRC}(\theta_n) + T_s - T$$