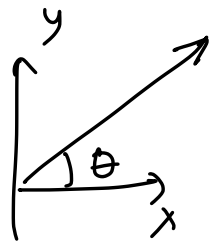
# Heliocentric

$P_i$ , Time period $T_i$ ← (how long it takes to revolve)

$R_i$ : distance of $P_i$ to Sun

Initial angle is $\theta_{0i}$




$$\vec{r}_i(t) = \langle R_i \cos(\theta_i(t)) , R_i \sin(\theta_i(t)) \rangle$$

$$\theta_i(t) = \left[ \theta_{0i} + 2\pi \left( \frac{t_i}{T_i} \right) \right] \bmod 2\pi$$

Sign

$$S_i(t) = \left\lfloor \frac{\theta_i(t)}{2\pi} \times 12 \right\rfloor \qquad 0 \qquad 2\pi$$

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