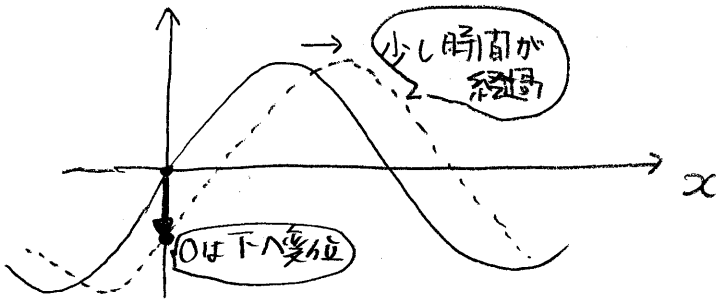
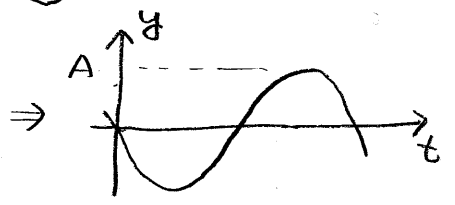


17

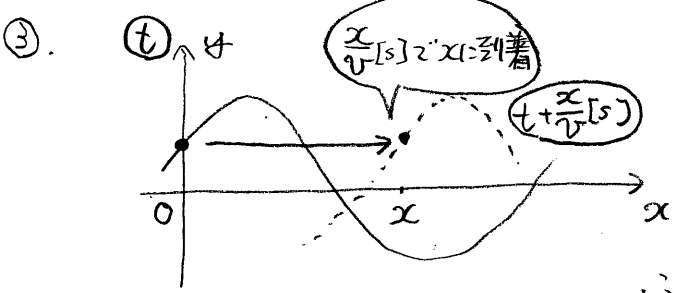
(1)



① 原点のy-tグラフ



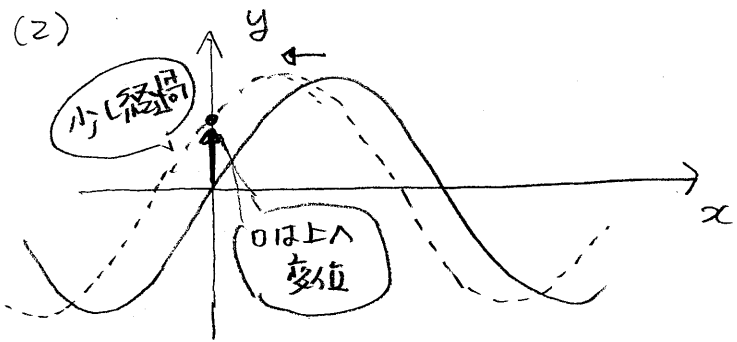
② ①のグラフより  $y_0 = -A \sin \frac{2\pi}{T} t$



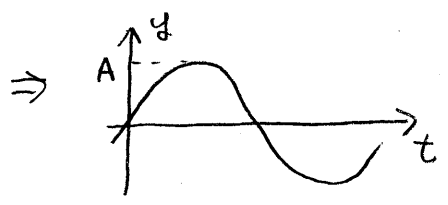
左図の関係より。  
 (位置xの時刻tでの変位)  
 (原点の時刻  $t - \frac{x}{v}$  での変位)

$\therefore y_1 = -A \sin \frac{2\pi}{T} (t - \frac{x}{v})$

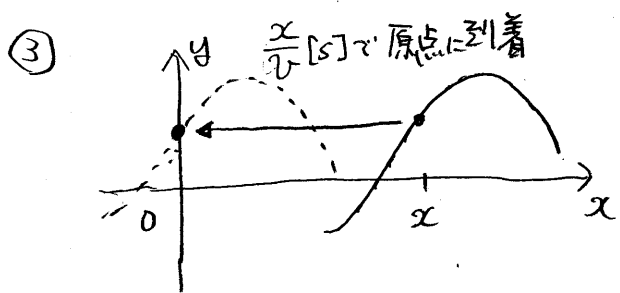
(2)



① 原点のy-tグラフ



② ①のグラフより  $y_2 = A \sin \frac{2\pi}{T} t$



(位置xの時刻tでの変位)  
 (原点の時刻  $t + \frac{x}{v}$  での変位)

$\therefore y_3 = A \sin \frac{2\pi}{T} (t + \frac{x}{v})$

補足 ③  $\frac{2\pi}{T} (t - \frac{x}{v})$  以降の変形は.

$$\begin{aligned} \frac{2\pi}{T} (t - \frac{x}{v}) &= 2\pi (\frac{t}{T} - \frac{x}{vT}) \\ &= 2\pi (\frac{t}{T} - \frac{x}{\lambda}) \end{aligned}$$

$v = f\lambda = \frac{1}{T}\lambda$  より  
 $vT = \lambda$