

[I](ア) $e\sqrt{2gh_0}$

(イ) $(1+e)m\sqrt{2gh_0}$

(ウ) $\frac{M-m}{M+m}$

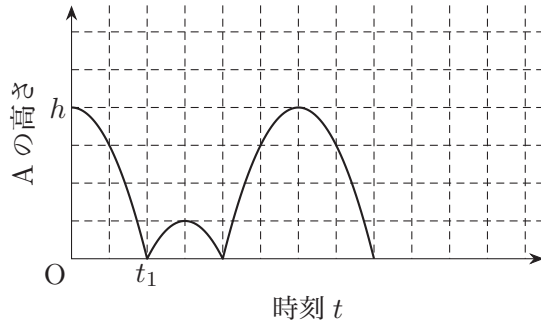
(エ) $\frac{M-m}{M+m}\sqrt{\frac{8h}{g}}$

(オ) $\frac{\pi^2 Mg}{8h} \left(\frac{M+m}{M-m}\right)^2$

(カ) $\frac{8m(M-m)h}{\pi(M+m)^2}$

(キ) $m\sqrt{2gh}$

解答図(I-A)



[II](ア) $-\frac{I_0}{\omega C} \cos \omega t$

(イ) $\omega L I_0 \cos \omega t$

(ウ) $\frac{C_1 C_2}{C_1 + C_2}$

(エ) $\frac{\omega C_1 C_2 V_0}{C_1 + C_2} \cos \omega t$

(オ) $\frac{C_1 V_0}{C_1 + C_2} \sin \omega t$

(カ) $-\frac{V_0}{\omega(L_1 + L_2)} \cos \omega t$

(キ) $\frac{L_2 V_0}{L_1 + L_2} \sin \omega t$

(ク) $\frac{L_1}{L_2} C_1$

(ケ) $\frac{1}{\sqrt{L_1 C_1}}$

[III](ア) $\frac{k_0 e^2}{r^2}$

(イ) $\frac{k_0 e^2}{mv^2}$

(ウ) $\frac{L^2}{mk_0 e^2}$

(エ) $-\frac{k_0 e^2}{r}$

(オ) $-\frac{mk_0^2 e^4}{2L^2}$

(カ) $\frac{E_n - E_{n'}}{h}$

(キ) $\frac{h}{mv}$

(ク) $\frac{hL_n}{mk_0 e^2}$

(ケ) $-\frac{h}{2m} \left(\frac{1}{\lambda_n^2} - \frac{1}{\lambda_{n'}^2} \right)$

(a) (2)

(b) (3)

(c) (1)

(d) (6)