

(I)	(ア)	$\frac{V}{e}$	(イ)	$\frac{V^2}{2e^2g}$
	(ウ)	$(\frac{1}{e}-1) \cdot \frac{1}{2}MV^2$	(エ)	$\frac{M}{M+m}V$
	(オ)	$\frac{Mm}{2(M+m)}V^2$	(カ)	$\frac{M-m}{M+m}V$
	(キ)	$\frac{k}{M}x$	(ク)	$-\frac{M+m}{Mm}kx$
	(ケ)	$2\pi \sqrt{\frac{Mm}{(M+m)k}}$		

[II]

(ア)	$-\frac{2mU}{\hbar B}$	(イ)	$\sqrt{U^2 + \frac{2\hbar E d}{m}}$
(ウ)	$\frac{2m}{\hbar B} \left(\sqrt{U^2 + \frac{2\hbar E d}{m}} - U \right)$	(エ)	$\frac{3mU^2}{2\hbar d}$
(オ)	$\frac{\pi m}{\hbar B}$	(カ)	$\frac{\pi^2 m E z}{2\hbar B^2}$
(キ)	$\frac{3\pi^2 m E z}{4\hbar B^2} + \frac{2\pi E z d}{3\hbar B}$	(ク)	0

[III]

(ア)	$n \sin \beta$	(イ)	$\frac{l+R}{s}$
(ウ)	$\frac{(l+R)s'}{(l'-R)s}$	(エ)	$\frac{n-1}{R}$
(オ)	$\frac{R}{n-1}$	(カ)	$1 + \sqrt{2}$
(キ)	30	(ク)	$\frac{\sqrt{5}}{2}$