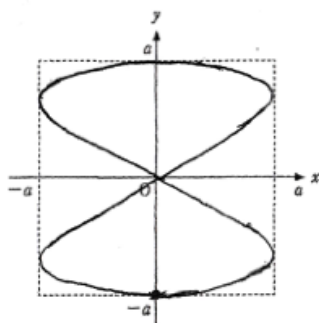


1

問 1 (1) $\frac{mg}{2 \sin \theta}$ (2) $2\pi\sqrt{\frac{l}{g}}$ (3) $\frac{3l}{\sin \theta}$

(あ)



問 2 (4) $\frac{mg}{\cos \theta}$ (5) $\sqrt{gl \tan \theta \sin \theta}$ (6) $\frac{mv+m'v'}{m+m'}$ (7) $\sqrt{V^2 - 2gl(\cos \theta - \cos \phi)}$

(8) $\frac{\sin \theta}{\sin \phi} V$ (い) (ア) (う) (ウ)

2

問 1 (1) $\frac{m_1 g}{BL} \tan \theta$ (2) $(r+2R)I$ (3) $vBL \cos \theta$ (4) $\frac{V}{2r}$ (5) $\frac{2m_1 g r \sin \theta}{(BL \cos \theta)^2}$

(6) $v_c - \frac{2m_2 g r \sin \theta}{(BL \cos \theta)^2}$

問 2 (7) $\sqrt{\frac{2qEL}{m}}$ (8) $\frac{\pi m}{qB}$ (9) $nqEL$ (10) $\frac{1}{B} \sqrt{\frac{2mnEL}{q}}$ (11) $B \sqrt{\frac{N+1}{N}}$

3

問 1 (1) $\frac{p_0 V_0}{nR}$ (2) $4T_0$ (3) $3nC_V T_0$ (4) $\frac{3}{2} nRT_0$ (5) $3n \left(C_V + \frac{1}{2} R \right) T_0$

(6) $-2nC_V T_0$ (7) $-n(C_V + R)T_0$ (8) $\frac{R}{3(2C_V + R)}$

問 2 (9) $-v_x + 2u$ (10) $-\frac{Nm\overline{v^2}u}{3L} \Delta t$ (11) $\frac{3}{2} Nk\Delta T$ (12) $\frac{2}{3}$