

6.

가) $Q_1 = cV$

나) $Q_2 = cV$

다) $Q_3 = 2cV$

7. 유전율 2배 \rightarrow 전기용량도 2배 (o)

L. $Q_2 = \frac{1}{2} Q_3$ (X)

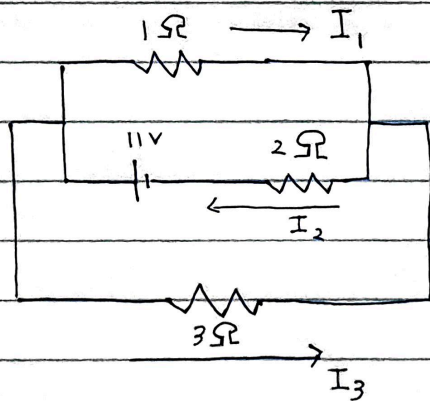
Γ. (X)

(가) : $\frac{(Q_2)^2}{4c} = \frac{cV^2}{4}$

(다) : $\frac{(Q_3)^2}{4c} = cV^2$

\rightarrow 4배

8.



$I_1 + I_3 = I_2$ — ①

$3I_3 + 2I_2 = 11$ — ②

$I_1 + 2I_2 = 11$ — ③

$3I_3 = I_1$ (∵ ②, ③) 을 ① 에 대입

$4I_3 = I_2$

∴ $I_3 = 1A$, $I_1 = 3A$, $I_2 = 4A$

7. $I_1 = 3A$ (o)

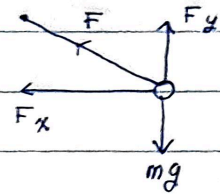
L. $8V$ (X)

Γ. $(I_3)^2 \cdot 3 = 3W$ (o)

10.

$$4\pi \int \frac{\rho}{g} = \frac{\sqrt{3}}{2} l \cdot 2\pi$$

$$v = \frac{\sqrt{3gl}}{4}$$

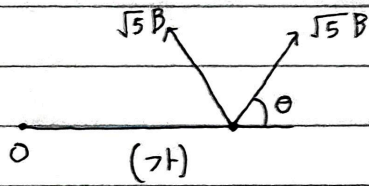


$$F_x = \frac{mv^2}{r} = \frac{\sqrt{3}mg}{8} \quad \left(\because r = \frac{\sqrt{3}}{2}l \right)$$

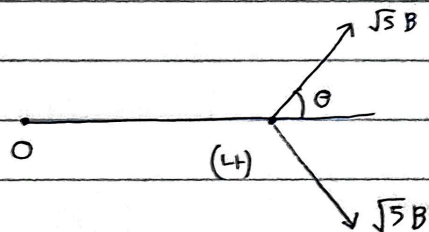
$$F_y = (F_x) \cdot (\tan 30^\circ) = \frac{mg}{8}$$

$$\therefore \text{수직항력 } f = mg - \frac{mg}{8} = \frac{7mg}{8}$$

11.



$$\tan \theta = 2$$



가) $4B$

나) $2B$

$$\therefore \frac{B_{(가)}}{B_{(나)}} = 2$$

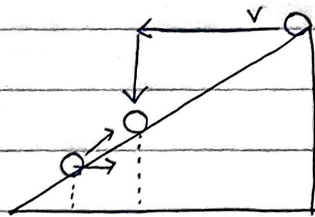
12.

$$\frac{1}{20} l m g = \frac{1}{2} m (v_1)^2 \quad \text{--- (1)}$$

$$2 l m g = \frac{1}{2} m (v_2)^2 \quad \text{--- (2)}$$

$$\textcircled{1} \times 40 = \textcircled{2} \quad \text{이므로} \quad \frac{v_2}{v_1} = 2\sqrt{10}$$

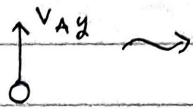
15.



①

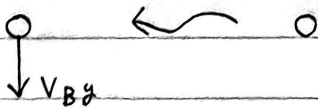
$$\frac{v_{Ax} + 0}{2} = \frac{v}{3} \Rightarrow v_{Ax} = \frac{2}{3}v$$

②



$$v_{By} = \sqrt{6gl}$$

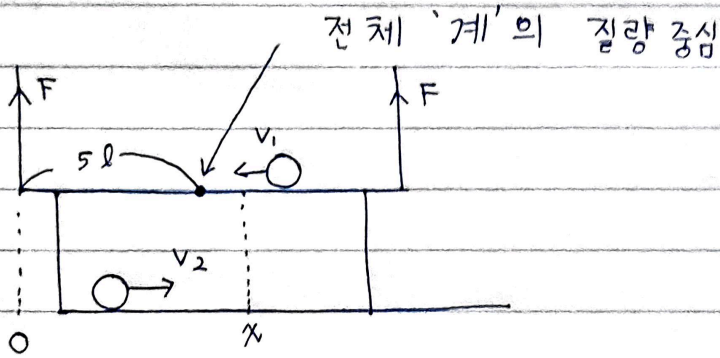
$$v_{Ay} = \frac{\sqrt{6gl}}{3}$$



$$\frac{1}{2} m (v_{Ay})^2 + \frac{1}{2} m (v_{Ax})^2 = mgl$$

$$\therefore v = \sqrt{3gl}$$

18.



$$7. \quad v(t) = \frac{2v_1 m + v_2 m}{6m} = 0 \quad (o)$$

$$\therefore 2v_1 + v_2 = 0$$

$$L. \quad v_1 = -v, \quad v_2 = 2v \text{ 라 가정} \quad (o)$$

C, D가 동일연직 \Rightarrow 같은 위치

$$x(t) = \frac{10ml + 6ml + 3m \cdot x}{6m} = 5l$$

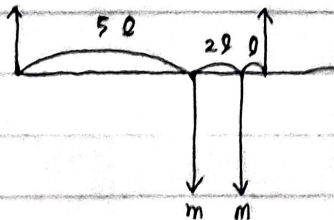
$$\therefore x = \frac{14}{3}l \rightarrow 10l - \frac{14}{3}l = \frac{16}{3}l$$

E.

(*)

$$\frac{16ml + 3l \cdot 2m + m \cdot y}{6m} = 5l$$

$$y = 8l$$



$$F_{\pi} = \frac{3}{8}m + \frac{1}{8}m = \frac{1}{2}m$$

19.

소리 속도 : 1로 가정

① B

$$\frac{1}{1 - v_B} = \frac{10}{9}$$

$$\therefore v_B = \frac{1}{10}$$

② A의 속력: $\frac{1}{10} + 3v$

C의 속력: $\frac{1}{10} + 2v$

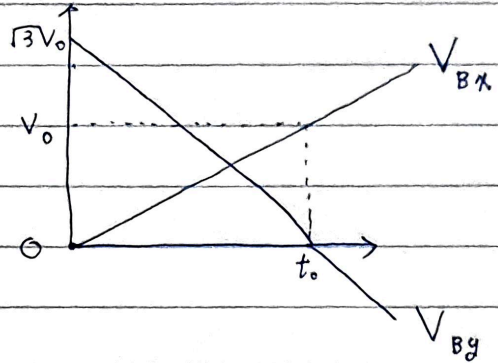
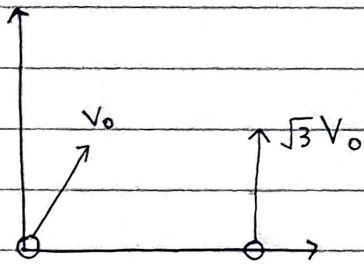
$$\left(\frac{1}{1 - v_A} \right) \cdot \frac{3}{4} = \frac{1}{1 + v_C}$$

$$3 \left(\frac{11}{10} + 2v \right) = 4 \left(\frac{9}{10} + 3v \right)$$

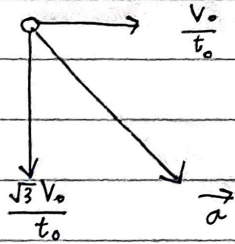
$$\therefore v = \frac{1}{60}$$

$$b_1 = \frac{1}{1 - v_A} b_0 = \frac{20}{17} b_0$$

20.



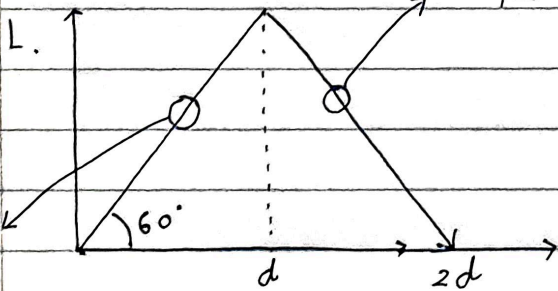
7.



$$|\vec{a}| = \frac{2V_0}{t_0}$$

(o)

가속도 방향



$$V_0 t = \frac{1}{2} a t^2 \quad (\times)$$

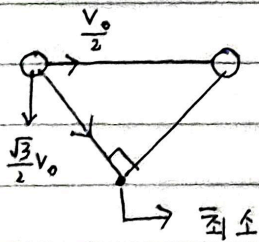
$$t = t_0$$

$$d = \frac{1}{2} V_0 \cdot t_0$$

$$\therefore 2d = V_0 t_0$$

C. 상대 속도 사용

(o)



$$\frac{d}{2} = V_0 \cdot t$$

$$\therefore t = \frac{d}{2V_0}$$