

№1

Берілгені

$\alpha = 30^\circ$

$v_1 = 24 \text{ км/с}$

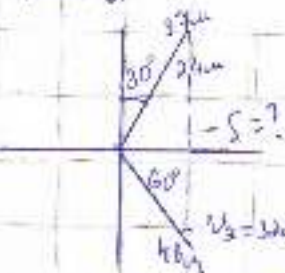
$\sin \beta = 60^\circ$

$v_2 = 32 \text{ км/с}$

$t = 1,5 \text{ с}$

$S = ?$

Шешуі



$\sin 30^\circ = \frac{1}{2}$ $\sin 60^\circ = \frac{\sqrt{3}}{2}$

$S_1 = v_1 t \sin \alpha = 24 \cdot 1,5 \cdot \frac{1}{2} = 18 \text{ км}$

$S_2 = v_2 t \sin \beta = 32 \cdot 1,5 \cdot \frac{\sqrt{3}}{2} = 24\sqrt{3} \text{ км}$

$S_{\text{орын}} = S_1 + S_2 = (18 + 24\sqrt{3}) \text{ км}$

$\frac{\sin \alpha}{\sin \beta} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$

$S_1 = 24 \cdot 1,5 = 36 \text{ км}$ $S_2 = 48 \text{ км}$

$S_{\text{орын}} = S_1 + S_2 = 84 \text{ км}$

№2

Берілгені

$i = 3 \text{ бірама}$

$P = \frac{1}{6} \text{ кВт}$

$\eta = ?$

Шешуі

$\frac{P_1}{P_2} = \frac{T_1}{T_2}$ — ұсаққа

$Pv = \frac{3}{2} \cdot \frac{R \Delta T}{\Delta t}$

$T = \frac{3R}{8 \text{ м}}$

$T = \text{const}$

$\frac{T_1}{T_2} = \frac{v_1}{v_2}$ — ұсаққа $P = \text{const}$

$\eta = \frac{T_1 - T_2}{T_1} \cdot 100\%$

$\eta = \frac{\frac{3}{2} - 0}{\frac{3}{2}} \cdot 100\% = 100\%$

№3

Берілгені

$a = 3 \text{ м}$

$B = 1 \text{ Тл}$

$\sin 90^\circ = 1$

$R = 10 \text{ м}$

$q = ?$

Шешуі

$I = \frac{q}{t}$

$\sin 90^\circ = 1$ $S_{\text{мыс}} = a^2 = 3^2 = 9 \text{ м}^2$

$S_{\text{мыс}} = 4\pi R^2$

$I = \frac{q}{t} \Rightarrow q = It$

$F_n = B I S \sin \alpha$

$q = B I S \sin \alpha = 1 \cdot B \cdot I = 3 \text{ км}$

№4

Берілгені

Шешуі

$$t = 24 \text{ сағ}$$

$$T = \frac{t}{N}$$

$$t = 24 \cdot 3600 = 86400 \text{ с}$$

$$g_0 = 9,78 \text{ м/с}^2$$

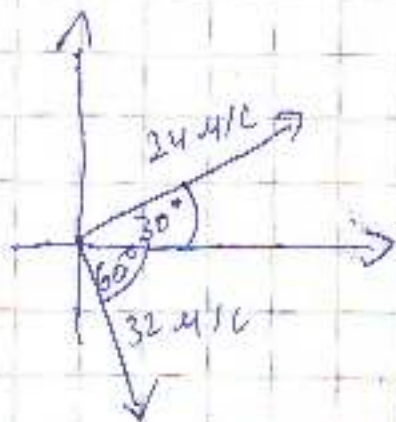
$$T = 2\pi \sqrt{\frac{L}{g}}$$

$$N = \frac{t}{T}$$

$$g_{\pi} = 9,83 \text{ м/с}^2$$

$$N = ?$$

N1



$$x_{\max_1} = \frac{v^2 \sin^2 \alpha}{2g} = \frac{24^2 \cdot \sin^2 30^\circ}{2 \cdot 10} = \frac{144}{20} = 7,2 \text{ м}$$

$$x_{\max_2} = \frac{32^2 \cdot \sin^2 60^\circ}{20} = \frac{16 \cdot 3^2}{20} = \frac{16 \cdot 9}{20} = \frac{144}{20} = 7,2 \text{ м}$$

$$|x_{\max_2} - x_{\max_1}| = \frac{144}{20} - \frac{36}{20} = \frac{108}{20} = 5,4 \text{ м}$$

$$0,76 \cdot 1,5 = 1,14$$

$$\text{м/с} \cdot \text{с} = 1,14$$

N2

$$\eta = \frac{P_1 - P_2}{P_1} \cdot 100\%$$

$$P_1 = \frac{24 \text{ Вт}}{3 \text{ В}}$$

$$\Delta U = \frac{3}{2} \text{ В}$$

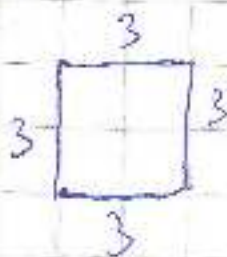
$$\frac{P_2}{14} = \frac{24 \text{ Вт}}{3 \text{ В}} \Rightarrow P = \frac{8 \text{ Вт}}{3 \text{ В}}$$

Внутри пропорции $P = 24 \text{ Вт} \cdot \text{В}$

$$\eta = \frac{\frac{24 \text{ Вт}}{3 \text{ В}} - \frac{8 \text{ Вт}}{3 \text{ В}}}{\frac{24 \text{ Вт}}{3 \text{ В}}} = \left(\frac{34 \text{ Вт}}{3 \text{ В}} - \frac{8 \text{ Вт}}{3 \text{ В}} \right) \cdot \frac{3 \text{ В}}{34 \text{ Вт}}$$

$$= \frac{3 \text{ В}}{34 \text{ Вт}} \cdot \frac{34 \text{ Вт}}{3 \text{ В}} - \frac{24 \text{ Вт} \cdot 3 \text{ В}}{34 \text{ Вт}} = 1 - \frac{24 \text{ В}^2}{34 \text{ Вт}} \cdot 100\%$$

N3



$$B = 1 \text{ Tл}$$

$$Q = BIL \sin \alpha$$

$$Q = I t$$

N4

$$g_3 = 9,78 \text{ м/с}^2$$

$$g_{11} = 9,83 \text{ м/с}^2$$

$$T = 2\pi \sqrt{\frac{l}{g}}$$

$$\frac{T_2}{T_1} = \frac{2\pi \sqrt{\frac{l}{g_1}}}{2\pi \sqrt{\frac{l}{g_2}}} = \frac{2\pi \sqrt{\frac{l}{g_2}}}{\sqrt{\frac{l}{g_1}}} \cdot \frac{\sqrt{g_2}}{2\pi \sqrt{g_1}} =$$

$$= \frac{\sqrt{g_2}}{\sqrt{g_1}} = \frac{9,78}{9,83} \approx 1 \quad \text{Өзгөрмейді.}$$

