

Есеп-1.

Бер:

$R = 20 \text{ Ом}$

шешуі:

$R_1 = 20 \text{ Ом}$

$R_2 = R_1 = 20 \text{ Ом}$

$t = 20^\circ \text{C}$

Есеп-2.

Бер:

$d_1 = \frac{1}{3}$

$d_2 = 3,5 \text{ см}$

$t = 1,5 \text{ см}$

шешуі:

$L = 0,5$

$t = 1,5$

$d = 3,5$

$f = \frac{2}{6} \cdot \frac{3}{2} = \frac{3}{6}$

$\frac{3}{6} \cdot \frac{3}{2} = \frac{16}{8}$

$D = \frac{T}{f} = \frac{16}{7}$

Бер:

$t = 20^\circ \text{C}$

$m = 100 \text{ г}$

$C_1 = 1,67$

$\beta = 3,4 \text{ Джек/л}$

$c_m = 2100$

$Q_1 + Q_2 = 0$
 $Q_1 = c_1 (Q - t)$
 $Q_2 = m c (Q - t_2) + \beta m$

$t_2 = ?$
 $c_1 (Q_1 - t) + c_2 m_2 (Q - t_2) + \beta = 0$
 $= 0 - c (Q_1 - Q) + (2 m_2 / Q - t_2) \frac{1}{3} = 0$
 $Q = m_2 (c_2 t_2 - \beta) + C_1 t_2 = Q_1 (200 \cdot 20) - 3,4 \cdot 10^3$
 $x : 20.$

Есеп-3.

Бер:

$R = 200 \text{ Ом}$

$U = 220 \text{ В}$

$t = 25 \text{ мин}$

$V = 0,6 \text{ л}$

$\rho = 1000 \text{ кг/м}^3$

$T = 4200 \text{ Дж / (кг} \cdot ^\circ \text{C)}$

шешуі:

Есеп-3

$R = 200 \text{ Ом}$

$h = 60^\circ \text{C}$

$U = 220 \text{ В}$

$t_0 = 25 \text{ мин}$

$t_0 = 20^\circ \text{C}$

$B = 0,6$

$\rho c = 10^5$

$c = 4200$

шешуі:

$Q_1 = \frac{U^2}{R} t$

$h = \frac{Q_1}{Q_2}$

$Q_1 = h \cdot Q_2$

$Q_1 = c m \Delta t = c \rho V (t_2 - t_1)$

$U^2 - V_1 = \frac{Q_1 (t_2 + t_1)}{c \rho V (t_2 + t_1)}$

$V_1 = \frac{0,6 \cdot 10^{-3} \cdot 10^5 \cdot \frac{220^2}{200} - 2500}{4200 \cdot 10^3 \cdot 20} = 0,26.$

Есеп-4.

Бері:

$$h_1 = 30 \text{ мм}$$

$$h_2 = 80 \text{ мм}$$

$$\rho_1 = 2700 \text{ кг/м}^3$$

$$\rho_2 = 900 \text{ кг/м}^3$$

Шешуі:

Есеп-4.

Бері: Шешуі

$$\frac{M}{K} = \frac{Kx_0^2}{2} = \frac{Kx_1^2}{2} + mg(x_0 + x_1)$$

$$Kx_0^2 + \frac{2mg}{K}x_1 + \frac{2mg}{K}x_0 = x_1^2 + 2x_0x_1 + x_0^2$$

$$D = \frac{4m^2g^2}{K^2} - \frac{2mg}{K}x_0 + 4x_0^2 = 4 \left(\frac{mg}{K} - x_0 \right)^2$$

$$x_{1,2} = 0, \pm \left(\frac{2mg}{K} - x_0 \right) = x_0 - \frac{2mg}{K}$$

$$x_1 = x_0$$

$$Kx_1 = mg, \quad K \left(x_0 - \frac{2mg}{K} \right) = mg$$

$$Kx_0 - 2mg = mg \quad x_0 = \frac{3mg}{K}$$