

$$1. x_1 = v_1 \cos \alpha t$$

$$x_2 = v_2 \cos \beta t$$

$$y_1 = v_1 \sin \alpha t - \frac{gt^2}{2}$$

$$y_2 = v_2 \sin \beta t - \frac{gt^2}{2}$$

$$S = \sqrt{(x_1 + x_2)^2 + (y_2 - y_1)^2} = \sqrt{(v_1 \cos \alpha t + v_2 \cos \beta t)^2 + (v_2 \sin \beta t - \frac{gt^2}{2} - v_1 \sin \alpha t + \frac{gt^2}{2})^2} = \sqrt{(\cos \alpha t)^2 (v_1 + v_2)^2 +$$

$$+ (\sin \alpha t)^2 (v_2 - v_1)^2} = t \sqrt{\cos^2 \alpha (v_1 + v_2)^2 + \sin^2 \alpha (v_2 - v_1)^2} = t \sqrt{\cos^2 \alpha \cdot v_1^2 + 2v_1 v_2 \cdot \cos \alpha + v_2^2}$$

$$2 \cos^2 \alpha + \sin^2 \alpha v_2^2 - 2v_1 v_2 \sin^2 \alpha + v_1^2 \sin^2 \alpha = t \sqrt{v_1^2 + v_2^2 + 2v_1 v_2 \cdot (\cos^2 \alpha - \sin^2 \alpha)} = t \sqrt{v_1^2 + v_2^2 +$$

$$2v_1 v_2 \cos^2 \alpha} = t \cdot \sqrt{576 + 600 + 2 \cdot 24 \cdot 4005} = 1,5 \cdot 56 = 84 \mu$$

$$4. F_1 = k \frac{q_1}{r_1}$$

$$q_1' + q_2' = q_1 + q_2$$

$$q = q_1 + q_2 = 14 \cdot 10^{-9} + (7 \cdot 10^{-9}) = 14 \cdot 10^{-9} - 7 \cdot 10^{-9} = 7 \cdot 10^{-9} \text{ Куд}$$

$$F_2 = k \frac{q_2'}{r_2}$$

$$q_2' = \frac{(q_1 + q_2) k}{r_1 + r_2} = 54 \text{ Куд}$$

$$3. T_2 = T$$

$$T_2 = d \Delta T \quad (d=4)$$

$$T_1 = d^2 T$$

$$III: q_{3-1} = 0,5 \Delta R (T_1 - T_3)$$

$$\Delta U_{3-1} = 1,5 \Delta R (T_1 - T_3)$$

$$Q_{3-1} = \Delta U_{3-1} + A_{3-1} = 2 \Delta R (T_1 - T_3) = 2 \Delta R T (d^2 - 1)$$

$$A = A_{3-1} + A_{2-3} = 0,5 \Delta R (T_1 - T_3) + \Delta R (T_3 - T_2) = 0,5 \Delta R T (d-1)^2$$

$$\eta = \frac{A}{Q_{3-1}} = \frac{d-1}{4d+1} = 0,15 = 15\%$$

Парақтың артқы жағын толтырмаңыз / Обратную сторону листа не заполнять