$$y_1 = v_1 * \sin(\alpha) * t$$
$$x_1 = v_1 * \cos(\alpha) * t$$
$$y_2 = v_2 * \sin(\beta) * t$$
$$x_2 = L_0 - v_2 * \cos(\beta) * t$$
$$L^2 = (x_1 - x_2)^2 + (y_1 - y_2)^2 = (v_1 * \cos(\alpha) * t - L_0 + v_2 * \cos(\beta) * t)^2 + (v_1 * \sin(\alpha) * t - v_2 * \sin(\beta) * t)^2 =$$
$$\frac{d(L^2)}{dt} = 2(v_1 * \cos(\alpha) * t - L_0 + v_2 * \cos(\beta) * t) * (v_1 * \cos(\alpha) + v_2 * \cos(\beta)) +$$
$$+ 2(v_1 * \sin(\alpha) * t - v_2 * \sin(\beta) * t) * (v_1 * \sin(\alpha) - v_2 * \sin(\beta)) = 0$$
$$\begin{pmatrix} v_1^2 * \cos^2(\alpha) * t - L_0 * v_1 * \cos(\alpha) + v_2 * v_1 * \cos(\alpha) * \cos(\beta) * t + \\ v_1 * \cos(\alpha) * v_2 * \cos(\beta) * t - L_0 * v_2 * \cos(\beta) + v_2^2 * \cos^2(\beta) * t \end{pmatrix} +$$
$$+ \begin{pmatrix} v_1^2 * \sin^2(\alpha) * t - v_2 * \sin(\beta) * v_1 * \sin(\alpha) * t + \\ - v_1 * \sin(\alpha) * v_2 * \sin(\beta) * t + v_2^2 * \sin^2(\beta) * t \end{pmatrix} = 0$$
$$\left(v_1^2 + v_2^2 + 2v_2 * v_1 * (\cos(\alpha) * \cos(\beta) - \sin(\beta) * \sin(\alpha))\right) * t - L_0 * (v_1 * \cos(\alpha) + v_2 * \cos(\beta)) = 0$$
$$t = L_0 * \frac{v_1 * \cos(\alpha) + v_2 * \cos(\beta)}{v_1^2 + v_2^2 + 2v_2 * v_1 * \cos(\alpha + \beta)} = 1000 * \frac{10 * \cos(60) + 30 * \cos(55)}{10^2 + 30^2 + 2 * 10 * 30 * \cos(60 + 55)} сек = 29{,}75138 \text{ сек}$$