



: אצטרך משהו

$$\vec{a} = (-g \sin \alpha, -g \cos \alpha)$$

$$\vec{v}_0 = (v_0 \cos \phi, v_0 \sin \phi)$$

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$$\vec{v}(t) = (-g \sin \alpha \cdot t + v_0 \cos \phi, -g \cos \alpha \cdot t + v_0 \sin \phi)$$

$$\vec{r}(t) = \left(-\frac{1}{2} g \sin \alpha \cdot t^2 + v_0 \cos \phi \cdot t, -\frac{1}{2} g \cos \alpha \cdot t^2 + v_0 \sin \phi \cdot t \right)$$

$$\vec{r}_0 = (0, 0)$$

$$\vec{r}(t_1) = (d, 0) \quad t_1 \text{ אף}$$

$$-\frac{1}{2} g \cos \alpha \cdot t_1^2 + v_0 \sin \phi \cdot t_1 = 0 \quad t = 0$$

$$t_1 = \frac{2 v_0 \sin \phi}{g \cos \alpha}$$

$$-\frac{1}{2} g \sin \alpha \cdot t_1^2 + v_0 \cos \phi \cdot t_1 = d$$

$$d = \frac{2 v_0^2 \sin \phi \cos \phi}{g \cos \alpha} - \frac{1}{2} g \sin \alpha \cdot \frac{4 v_0^2 \sin^2 \phi}{g^2 \cos^2 \alpha} =$$

$$= \frac{2 v_0^2 \sin \phi}{g \cos \alpha} (\cos \phi - \tan \alpha \sin \phi)$$

$$\vec{r} = (d \cos \alpha, d \sin \alpha)$$

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