

\* gerak horizontal: GLB

$$X = [v_0 \cos \alpha] [t_a]$$

$$= [v_0 \cos \alpha] \left[ \frac{2v_0 \sin \alpha}{g} \right]$$

$$= \frac{v_0^2 2 \sin \alpha \cos \alpha}{g} = \frac{v_0^2}{g} [\sin 2\alpha]$$

$$v_0 = \sqrt{\frac{gX}{\sin 2\alpha}} \rightarrow t_a = \frac{2 \sin \alpha}{g} \sqrt{\frac{gX}{\sin 2\alpha}}$$

$$h = \frac{v_0^2 \sin^2 \alpha}{2g} = \frac{gX}{\sin 2\alpha} \frac{\sin^2 \alpha}{2g} = \frac{X \sin^2 \alpha}{4 \cancel{\sin \alpha} \cancel{\cos \alpha}} = \frac{X}{4} \tan \alpha$$