

(2)

Linearization

(a) Substituting
the variable

$$S = \cancel{S_0} + \cancel{S_0 t} + \frac{1}{2} a_{\text{max}} t^2$$
$$\cancel{S_0} = \cancel{S_0} = \cancel{S_0} = \cancel{S_0}$$
$$\frac{1}{2} a_{\text{max}} t^2$$