

1. Complete derivatives:

a. For a_i in linear interpolation

$$g_i = a_i(x - x_i) + b_i$$

$$\text{From video: } b_i = y_i$$

Plug in $x = x_{i+1}$

$$y_{i+1} = a_i(x_{i+1} - x_i) + y_i$$

$$y_{i+1} - y_i = a_i(x_{i+1} - x_i)$$

$$a_i = \frac{y_{i+1} - y_i}{x_{i+1} - x_i}$$