# Interpolation: What is it?

1分

We're going to look at *interpolation* (in contrast to data fitting (https://en.wikipedia.org/wiki/Interpolation#Related_concepts)). In particular, we will look at polynomial interpolation (https://en.wikipedia.org/wiki/Polynomial_interpolation#Definition).

What is the difference between interpolating and least-squares data fitting a linear combination of functions

$$f(x) = \alpha_1 \phi_1(x) + \alpha_2 \phi_2(x) + \cdots + \alpha_n \phi_n(x)$$

to some data points $(x_i, y_i)$? You can look at the two links above to help with this.

选项*

- None whatsoever
- The result of interpolation is not guaranteed to satisfy $f(x_i) = y_i$
- Data fitting only works for lines, interpolation works for higher-order polynomials
- The result of data fitting is not guaranteed to satisfy $f(x_i) = y_i$

参考答案: 'The result of data fitting is not guaranteed to satisfy $f(x_i) = y_i$'.