

$x$	1	2	3	4	5
$y$	1	1	2	2	4

**a.**  $y = b + ax$

**b.**  $y = ax^2$

Fit the data with the models given, using least squares.

The following data represent the length and weight of a fish (bass).

Length (in.)	12.5	12.625	14.125	14.5	17.25	17.75
Weight (oz)	17	16.5	23	26.5	41	49

Please use Lagrangian form of polynomial and Cubic spline model to interpolate the weight for a fish of length of 14.3(in.) and extrapolate the weight for a fish of length of 18(in.)

- (1) Pick three points first.
- (2) Use totally six points, show the graph of  $y$  with respect to  $x$ , and compare the result that you got in the 1<sup>st</sup> case.