Polyval() and Polyfit()

Ex. `p1 = [3 0 -1];`
`polyval(p1, 1:2)` $\longrightarrow$ $3x^2 + 0x - 1$

`polyval =` $3(2)^2 + 0(2) - 1$

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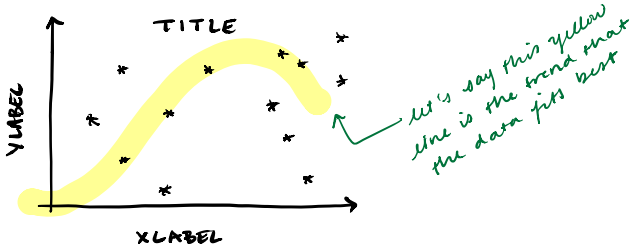
Ex. (More practical)

(a) Have a data file where first column is x-values, second column is y-values. This data file is called raw_data.dat

```
load raw_data.dat
plot(raw_data(:,1), raw_data(:,2), 'K*')
Xl = sprintf('%.5LABEL', 'X');
yl = sprintf('%.5LABEL', 'Y');
title('TITLE')
xlabel(xl)
ylabel(yl)
```

just showing examples of sprintf(), not really necessary in this example



(b) Now seeing this plot, we want to fit the data! Let's say we want to fit a cubic meaning polynomial order is 3.

x-values, y-values, polynomial order

```
p2 = polyfit(raw_data(:,1), raw_data(:,2), 3);
p2 =
    -3    2    -1    4

trend = polyval(p2, linspace(0,100,1000));
```

(and if wanted to superimpose the trend line like in the above plot)

```
hold on
plot(trend, p2, 'y')
hold off
```