

---

```
% Joshua Oates
% this is my code for prelab 5
```

## Section 0 - clean up

```
clear all;
close all;
clc;
```

## Section 1

NOTE: This must be done before lab. If it is not completed, you will not be allowed into lab. Use the `polyfit()` command to find the coefficients of a 3rd order polynomial that passes through the points (-5,4), (-2, -1), (4, 2), and (5,-5).

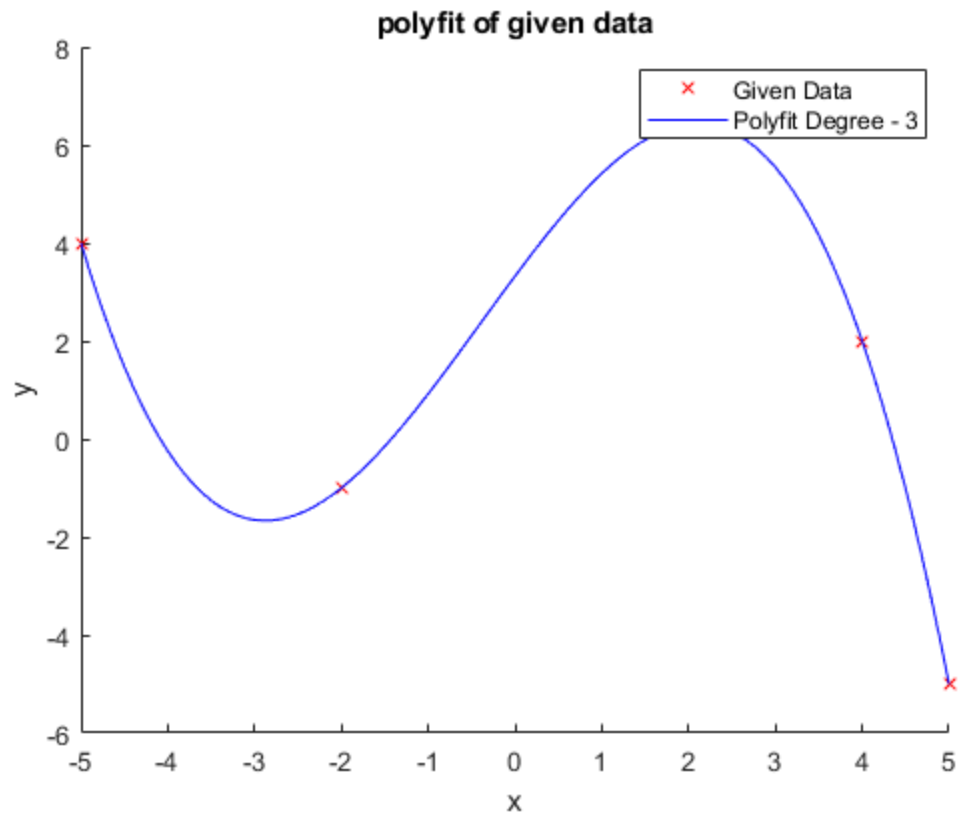
```
x = [-5,-2,4,5];
y = [4,-1,2,-5];
```

```
p = polyfit(x,y,3);
```

```
% Evaluate and plot the polynomial on the interval [-5:.1:5] using
% the polyval() command. Also, plot the points on the line from above using
% red x's as data markers.
```

```
hold on
plot(x,y,'x r')
X = -5:.1:5;
Y = polyval(p,X);
plot(X,Y,'b')
xlabel("x")
ylabel("y")
title("polyfit of given data")
legend("Given Data","Polyfit Degree - 3")
% Be sure to label your plot. Finally, comment on how is the polyfit()
% command similar to Newton's Divided
% Difference method?
disp("polyfit() is similar to Newton's Divided Difference method in that they
both aim to interpolate, or get as close as possible, to the given data")
```

```
polyfit() is similar to Newton's Divided Difference method in that they both
aim to interpolate, or get as close as possible, to the given data
```



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