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Quiz 1

Ethan Vosburg

```
clear
clc
```

Question 1a

Create a vector, A, with evenly spaced values from 0 to 32 in increments of 4.

```
A = linspace(0,32,4);
fprintf("\nVector A :\n")
disp(A);
```

```
Vector A :
        0   10.6667   21.3333   32.0000
```

Question 1b

Create a vector, B, with 8 evenly spaced values starting at 0 and ending at 32.

```
B = linspace(0,32,8);
fprintf("\nVector B :\n")
disp(B);
```

```
Vector B :
  Columns 1 through 7

        0    4.5714    9.1429    13.7143    18.2857    22.8571    27.4286
```

Question 1c

Create a vector, C, with 10 logarithmically spaced values between 100 and 100,000.

```
C = logspace(2,5,10);
fprintf("\nVector C :\n")
disp(C);
```

Vector C :
   1.0e+05 *

  Columns 1 through 7

    0.0010   0.0022   0.0046   0.0100   0.0215   0.0464   0.1000

  Columns 8 through 10

    0.2154   0.4642   1.0000

Question 1d

Create an array, D, with first column containing the values 5B, second column containing the values 2B + 13, and third column is the vector B.

```
D(:,1) = 5.*B';
D(:,2) = 2.*B' + 13;
fprintf("\nVector D :\n")
disp(D);
```

Vector D :
        0   13.0000
  22.8571   22.1429
  45.7143   31.2857
  68.5714   40.4286
  91.4286   49.5714
 114.2857   58.7143
 137.1429   67.8571
 160.0000   77.0000

Question 1e

Create two-column array E such that its first and second columns are the last two rows of array D, respectively.

```
E(:,1) = D(end-1, :);
E(:,2) = D(end, :);
fprintf("\nVector E :\n")
disp(E);


Vector E :
  137.1429  160.0000
   67.8571   77.0000
```

Question 2a

Create a vector, X, which ranges from 10 to 30 with increments of 2.

```
X = (10:2:30);
```

Question 2b

Using your vector X from part 2a create a vector: $Y1 = 4X^2 - 6X + 10$

```
Y1 = 4.*X.^2 - 6.*X + 10;
```

Question 2c

Using your vector X from part a. create a vector, $Y2 = 2X2 - 3X + 10$

```
Y2 = 2.*X.^2 - 3.*X + 10;
```

Question 2d

Create a single plot of both Y1 and Y2 versus X, with X on the abscissa and Y1 and Y2 on the ordinate (regular orientation). Show the points for Y1 on the plot as green asterisks and those for Y2 as red squares. Show a blue line through the Y1 points and a black line through the Y2 points.

```
figure(20)
question2DPlot = axes();
hold(question2DPlot,'on');

plot(X, Y1,'b-*','Parent',question2DPlot,'MarkerSize',
 6, 'MarkerEdgeColor', 'g');
plot(X, Y2,'k-s','Parent',question2DPlot,'MarkerSize',
 6, 'MarkerEdgeColor', 'r');
```
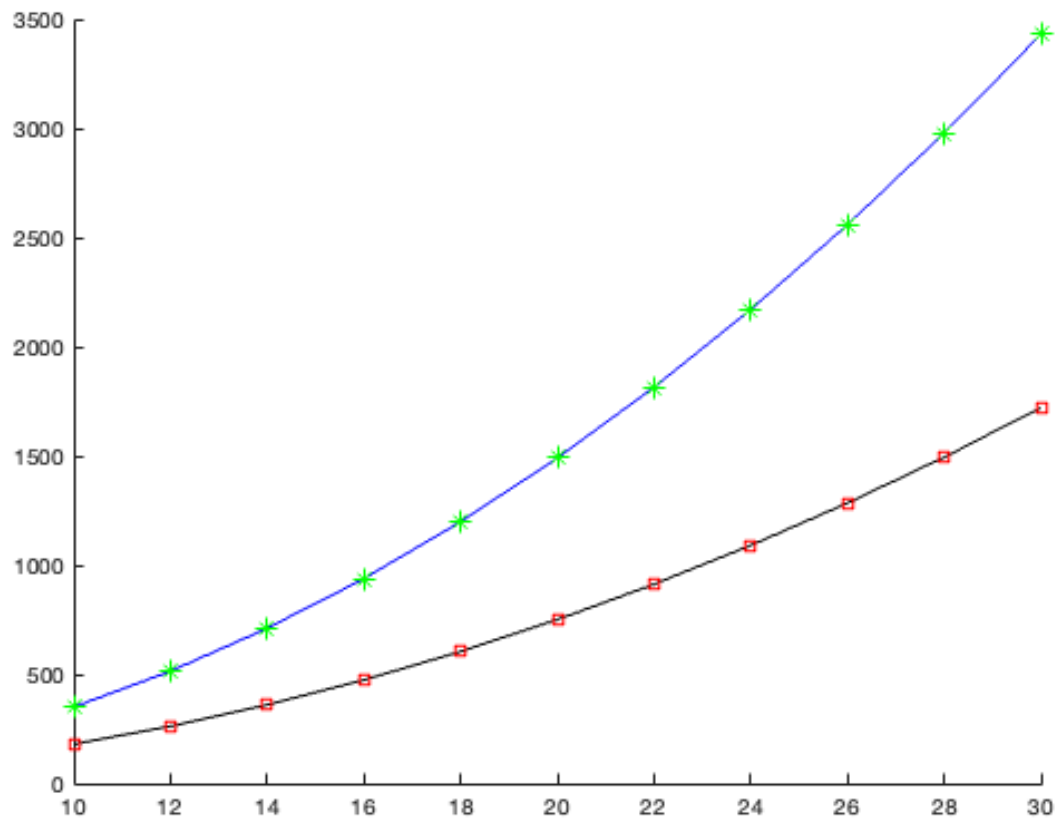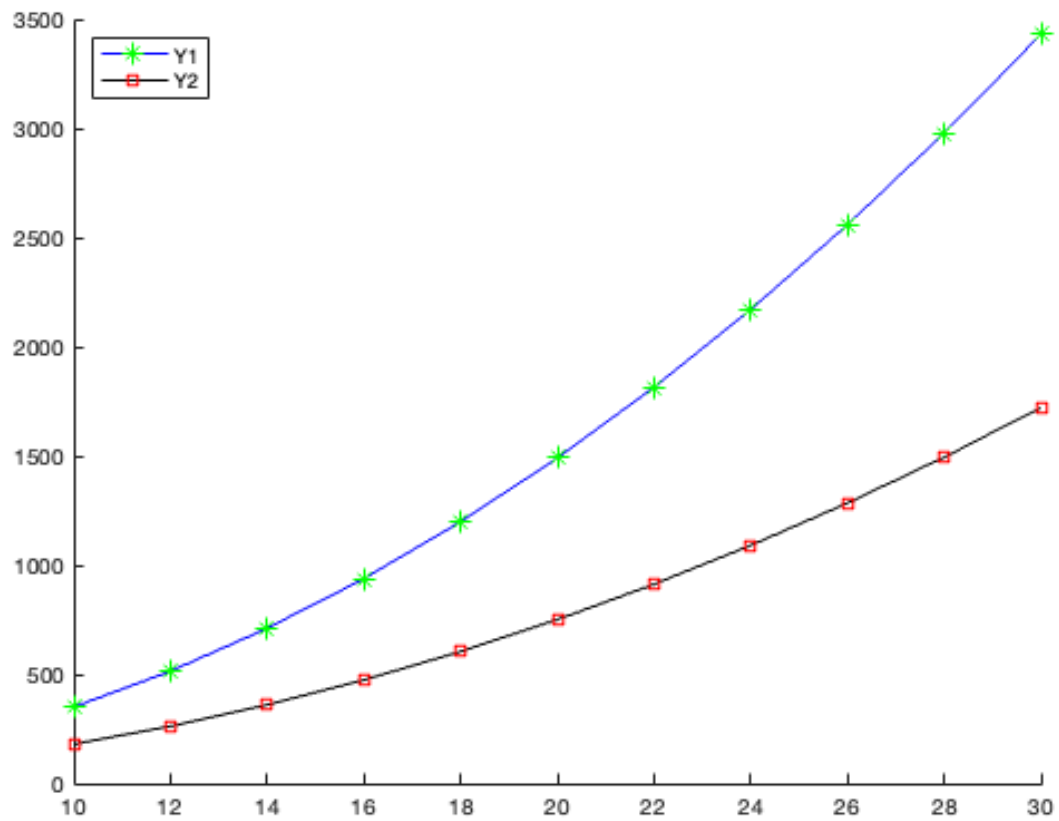
Question 2d

Use a legend to differentiate between Y1 & Y2.

```
legend(question2DPlot, 'Y1', 'Y2', 'Location', 'northwest');
```
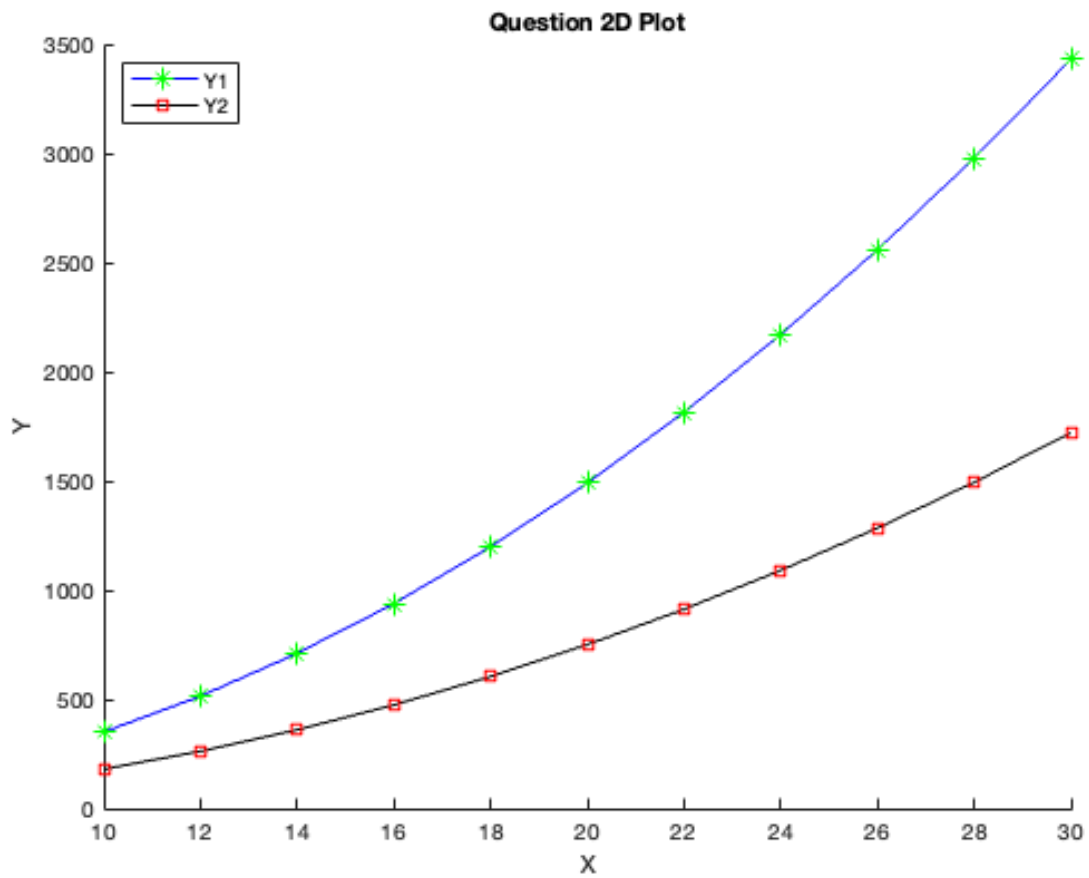
Question 2f

Title the plot and label the axes.

```
% Create title
title({'Question 2D Plot'});

% Create ylabel
ylabel({'Y'});

% Create xlabel
xlabel({'X'});
```
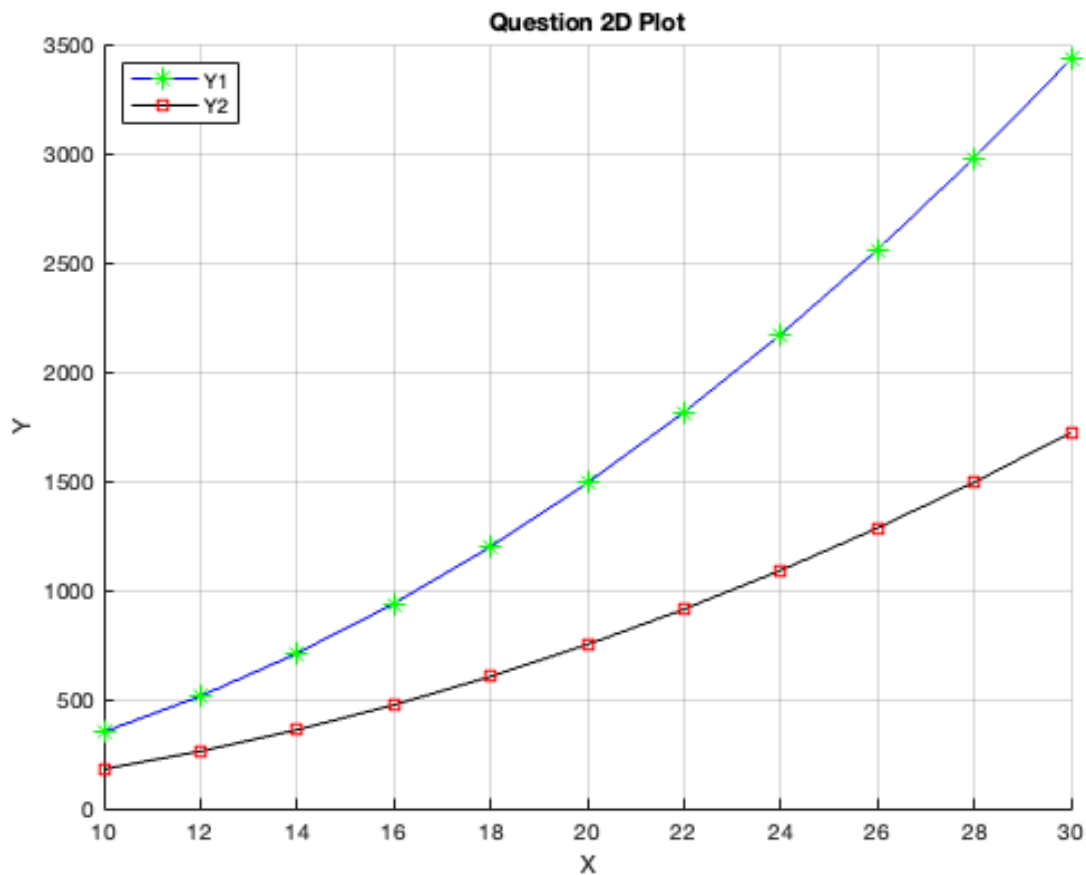
Question 2D Plot

Question 2g

Show grids on the plot.

```
grid(question2DPlot, 'on');
```

Question 2D Plot

Question 3

Create a vector called myInfo containing 3 elements: the first element is the number of siblings you have, the second element is how many miles you live from Sierra College (to the nearest tenth of a mile), and the third element is the year you expect to graduate with your bachelor's degree. Use the fprintf function and your myInfo variable to output the following, except use your information. The fprintf function should call your myInfo variable—do not hard code the numbers. Be sure your output follows precisely:

Name: "Pat"; number of siblings: 2; reside: 5.2 miles from SC; Bachelor's expected: 1979.

```
myInfo = [2; 1.2; 2025];

fprintf("\nName: "Ethan"; number of siblings: %d; reside: %1.1f miles from SC;
 Bachelor's expected: %d.\n", myInfo(1), myInfo(2), myInfo(3));


Name: "Ethan"; number of siblings: 2; reside: 1.2 miles from SC; Bachelor's
 expected: 2025.
```

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