Lecture 1.2: Matlab Environment

Run these on the command window:

```
x = 7000
```

```
x = 7000
```

```
y = x + 5
```

```
y = 7005
```

```
zebra = y - x
```

```
zebra = 5
```

```
x = 1  + 2
```

```
x = 3
```

```
y = x +  10
```

```
y = 13
```

```
x = 1  + 10
```

```
x = 11
```

```
y = 20
```

```
y = 20
```

```
z = 12 + 25
```

```
z = 37
```

```
abc = x + y + z
```

```
abc = 68
```

Lecture 1.4: Matlab as a Calculator

- To compute the light year in kilometers:
- speed_kps is 300,000
- year_sec (year in seconds unit): is 365*24*60*60

```
speed_kps = 300000
```

```
speed_kps = 300000
```

```
%The number of seconds in years:
year_sec  = 365*24*60*60
```

```
year_sec = 31536000
```

```
lightyear_km = year_sec*speed_kps
```

```
lightyear_km = 9.4608e+12
```

```
lightyear_km2 = 9.4608*10^12
```

```
lightyear_km2 = 9.4608e+12
```

- To compute how many minutes to get from earth to the sun.
- earth_to_sun_km = 150*10^6
- earth_to_sun_sec = earth_to_sun_km/speed_kps
- earth_to_sun_min = earth_to_sun_sec/60

```
earth_to_sun_km = 150*10^6
```

```
earth_to_sun_km = 150000000
```

```
earth_to_sun_sec = earth_to_sun_km/speed_kps
```

```
earth_to_sun_sec = 500
```

```
earth_to_sun_min = earth_to_sun_sec/60
```

```
earth_to_sun_min = 8.3333
```

```
abs_zero_C = -273.15
```

```
abs_zero_C = -273.1500
```

```
abs_zero_F = abs_zero_C*9/5 + 32
```

```
abs_zero_F = -459.6700
```

```
paper_ignition_F = 451
```

```
paper_ignition_F = 451
```

```
% Continue a long statement:
a_really_long_variable_name = 7
```

```
a_really_long_variable_name = 7
```

```
another_long_one = 17
```

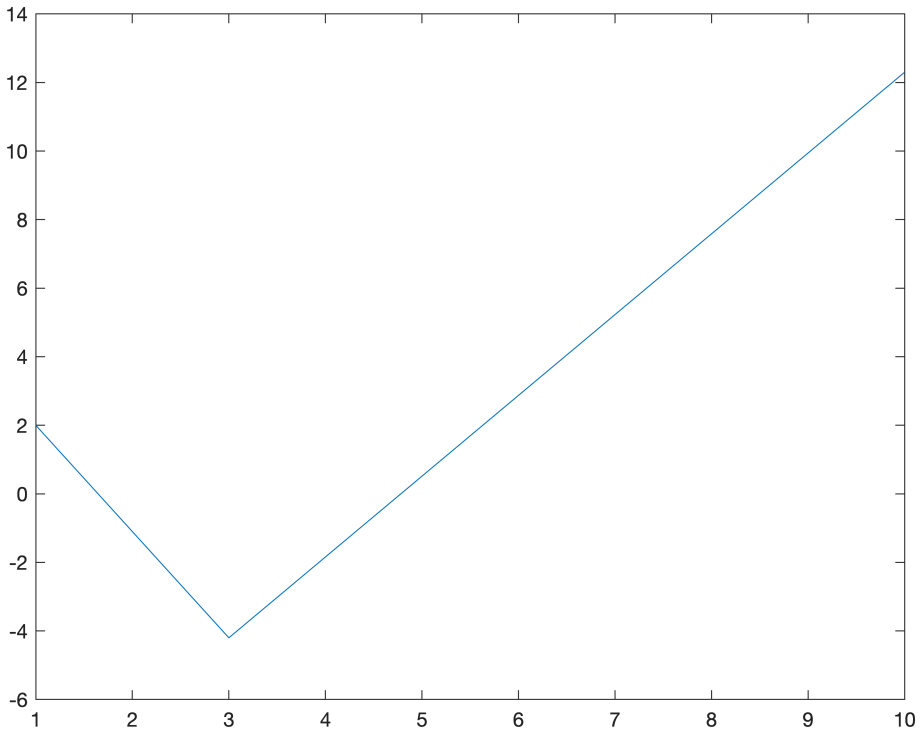
```
another_long_one = 17
```

```
yet_another_long_variable_name = a_really_long_variable_name*...
    another_long_one
```

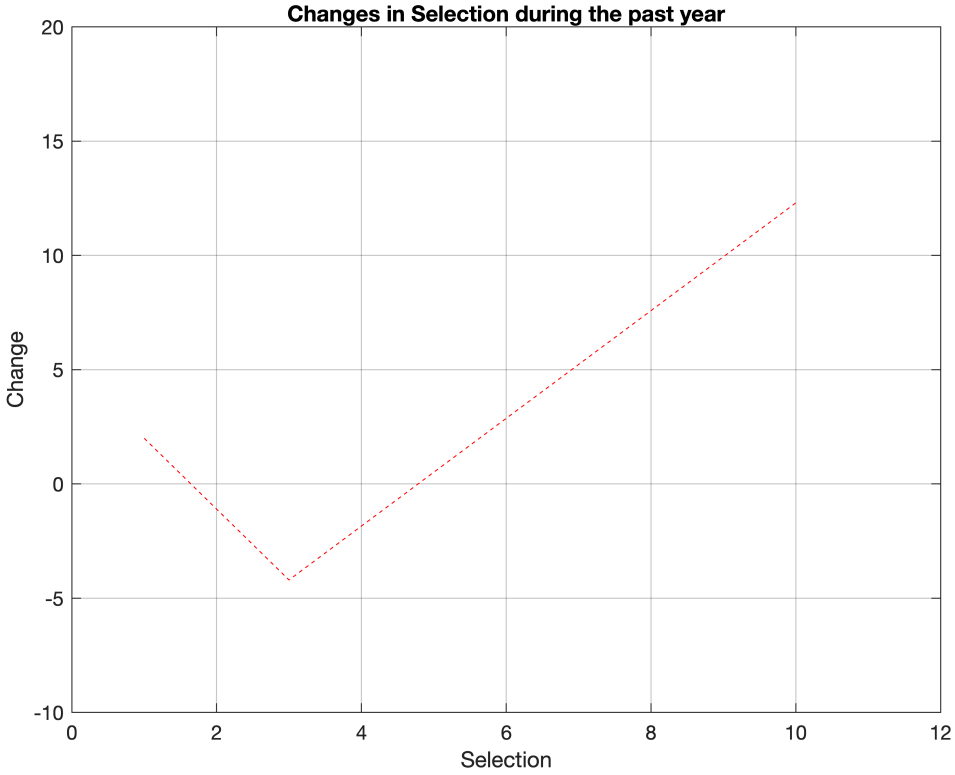
```
yet_another_long_variable_name = 119
```

Plotting in Matlab

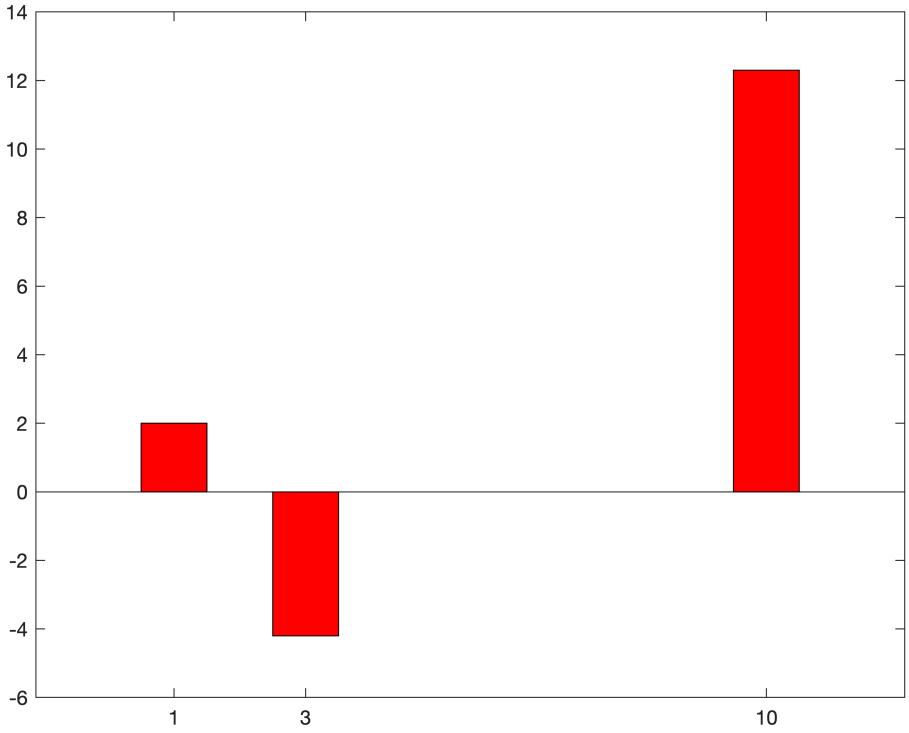
```
% Specify the x and y coordinates:
x_coordinates = [1,3,10];
y_coordinates = [2,-4.2,12.3];

% Plot the points:
plot(x_coordinates, y_coordinates)
```




```
% Plot:with line spec:
plot(x_coordinates, y_coordinates, 'r--'); grid on
xlabel('Selection')
ylabel('Change')
title('Changes in Selection during the past year')
axis([0,12,-10,20])
```




```
% Bar graph:
bar(x_coordinates, y_coordinates, 0.5, 'red')
```




```
figure
pie([4 2 7 4 7]);
```