

Line Drawing

Review

```
In[1]:= Plot[2 x - 3, {x, -5, 5}]
```

```
In[2]:= Plot[2 x - 3, {x, -5, 5},  
  AspectRatio → Automatic, PlotRange → {{-10, 10}, {-10, 10}}  
]
```

```
In[3]:= Plot[2 x - 3, {x, -5, 5},  
  AspectRatio → Automatic, PlotRange → {{-10, 10}, {-10, 10}},  
  PlotStyle → {Thick, Orange, Dashing[Medium]}]
```

Other types of Dashing: Dashing[0.05] or Dashing[{0.05, 0.02, 0.01, 0.02}]

```
In[4]:= Plot[2 x - 3, {x, -5, 5},  
  AspectRatio → Automatic, PlotRange → {{-10, 10}, {-10, 10}},  
  PlotStyle → {Thick, Orange, Dashing[Medium]},  
  GridLines → Automatic]
```

Reminder: Range

```
In[5]:= Range[-10, 10, 2]
```

```
In[6]:= Plot[2 x - 3, {x, -5, 5},  
  AspectRatio → Automatic, PlotRange → {{-10, 10}, {-10, 10}},  
  PlotStyle → {Thick, Orange, Dashing[Medium]},  
  GridLines → {Range[-10, 10, 2], Range[-10, 10, 2]}  
]
```

```
In[7]:= Plot[2 x - 3, {x, -5, 5},  
  AspectRatio → Automatic, PlotRange → {{-10, 10}, {-10, 10}},  
  PlotStyle → {Thick, Orange, Dashing[Medium]},  
  GridLines → {Range[-10, 10, 1], Range[-10, 10, 1]},  
  Ticks -> {Range[-10, 10, 2], Range[-10, 10, 2]}  
]
```

Showing more than one at a time:

```
In[8]:= Show[  
  Plot[2 x - 3, {x, 2, 8}, PlotStyle → Red],  
  Plot[-x + 1, {x, -7, -6}, PlotStyle → Green],  
  PlotRange → All, AspectRatio → Automatic  
]
```

Note: Overall options are options for Show.

```
In[9]:= Show[
  Plot[2 x - 3, {x, 2, 8}, PlotStyle -> Red],
  Plot[-x + 1, {x, -7, -6}, PlotStyle -> {Thickness[0.01], Green}],
  Plot[6, {x, -10, 10}, PlotStyle -> Blue],

  PlotRange -> All, AspectRatio -> Automatic
]
```

Graphics okay for vertical line:

```
In[10]:= Show[
  Plot[2 x - 3, {x, 2, 8}, PlotStyle -> Red],
  Plot[-x + 1, {x, -7, -6}, PlotStyle -> {Thickness[0.01], Green}],
  Plot[6, {x, -10, 10}, PlotStyle -> Blue],

  Graphics[{Yellow, Line[{{5, 0}, {5, 10}}]}],

  PlotRange -> All, AspectRatio -> Automatic
]
```

Using a Table for a pattern:

```
In[11]:= Show[
  Plot[2 x - 3, {x, 2, 8}, PlotStyle -> Red],
  Plot[-x + 1, {x, -7, -6}, PlotStyle -> {Thickness[0.01], Green}],
  Plot[6, {x, -10, 10}, PlotStyle -> Blue],

  Graphics[{Yellow, Line[{{5, 0}, {5, 10}}]}],

  Table[Plot[3 x + n, {x, -10, 10}, PlotStyle -> Lighter[Brown, 0.8]], {n, -8, 8, 2}],

  PlotRange -> {{-10, 10}, {-10, 10}}, AspectRatio -> Automatic
]
```

Assignment

Draw a picture using only lines. You must have at least two lines of each type of slope (positive, negative, zero, and undefined). Also include at least one set of lines using Table for the intercept, slope, or both. Use a variety of PlotStyle commands. You must use AspectRatio->Automatic. You can use whatever PlotRange you want.

Make your design in a new notebook. Include a title, your name, a description of what you learned, and your code.