

Pensieve header: September 29: Textbook (EIWL) chapters 5-8, unevaluated.

## 5. Operations on Lists

```
{1, 2, 3} + 10  
{1, 1, 2} * {1, 2, 3}  
Range[10]^2  
Sort[{4, 2, 1, 3, 6}]  
Length[{5, 3, 4, 5, 3, 4, 5}]  
Total[{1, 1, 2, 2}]  
Total[Range[10]]  
Count[{a, b, a, a, c, b, a}, a]  
First[{7, 6, 5}]  
Last[{7, 6, 5}]  
Part[{7, 6, 5}, 2]  
First[Sort[{6, 7, 1, 2, 4, 5}]]  
Min[{6, 7, 1, 2, 4, 5}]  
IntegerDigits[1988]  
Last[IntegerDigits[1988]]  
Take[{101, 203, 401, 602, 332, 412}, 3]  
Take[IntegerDigits[2^100], 10]  
Drop[{101, 203, 401, 602, 332, 412}, 3]
```

## 6. Making Tables

```
Table[5, 10]  
Table[x, 10]  
Table[{1, 2}, 10]  
Table[PieChart[{1, 1, 1}], 3]  
Table[a[n], {n, 5}]  
Table[n + 1, {n, 10}]  
Table[n^2, {n, 10}]  
Table[Range[n], {n, 5}]
```

```

Table[Column[Range[n]], {n, 8}]
Table[ListPlot[Range[10 * n]], {n, 3}]
Table[PieChart[Table[1, n]], {n, 5}]
Table[2^expt, {expt, 10}]
Table[{x, x + 1, x^2}, {x, 5}]
Table[f[n], {n, 10}]
Table[f[n], {n, 4, 10}]
Table[f[n], {n, 4, 10, 2}]
Range[4, 10]
Range[4, 10, 2]
f /@ Range[4, 10, 2]
Range[0, 1, 0.1]
ListPlot[Table[x - x^2, {x, 0, 1, .02}]]
ListPlot[Range[0, 1, .02] - Range[0, 1, .02]^2]
Table[RandomInteger[10], 20]
RandomInteger[10, 20]

```

## 7. Colors and Styles

```

Red
{Red, Green, Blue, Purple, Orange, Black}
ColorNegate[Yellow]
Blend[{Yellow, Pink, Green}]
RGBColor[1, 0, 0]
Table[RGBColor[1, g, 0], {g, 0, 1, 0.05}]
Hue[0.5]
Table[Hue[u], {u, 0, 1, 0.05}]
RandomColor[]
Table[RandomColor[], 30]
Blend[Table[RandomColor[], 20]]
Style[1000, Red]
Table[Style[RandomInteger[1000], RandomColor[]], 30]

```

```
Style[x, 30]
```

```
Table[Style[100, n], {n, 30}]
```

```
Table[Style[x, RandomColor[], RandomInteger[30]], 25]
```

## 8. Basic Graphics Objects

```
Graphics[Circle[]]
```

```
Graphics[Disk[]]
```

```
Graphics[RegularPolygon[5]]
```

```
Table[Graphics[RegularPolygon[n]], {n, 5, 10}]
```

```
Graphics[{Orange, RegularPolygon[5]}]
```

```
Graphics3D[Sphere[]]
```

```
{Graphics3D[Cone[]], Graphics3D[Cylinder[]]}
```

```
Graphics3D[Style[Sphere[], Yellow]]
```