You have some bugs on the third page. Otherwise very good. 7 1/2 / 8

Hexi—PS13—2025 - 03 - 25

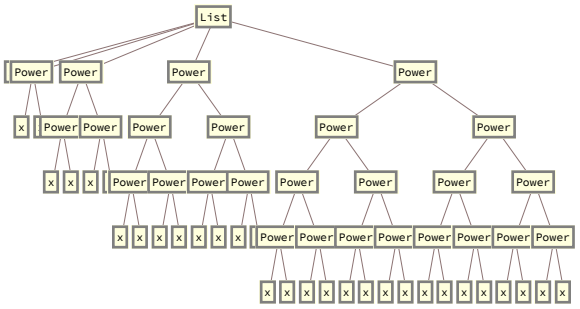
Exercises from EIWL3 Section 33

In[84]:=
```
Head[ListPlot[{x, y}]]
```
Out[84]=
```
Graphics
```

In[85]:=
```
Times @@ Range[100]
```
Out[85]=
```
93 326 215 443 944 152 681 699 238 856 266 700 490 715 968 264 381 621 468 592 963 895 217 599 993 ⁘
 229 915 608 941 463 976 156 518 286 253 697 920 827 223 758 251 185 210 916 864 000 000 000 000 ⁘
 000 000 000 000
```

In[86]:=
```
f @@@ Tuples[{a, b}, 2]
```
Out[86]=
```
{f[a, a], f[a, b], f[b, a], f[b, b]}
```

In[87]:=
```
TreeForm[NestList[#^# &, x, 4]]
```
Out[87]//TreeForm=



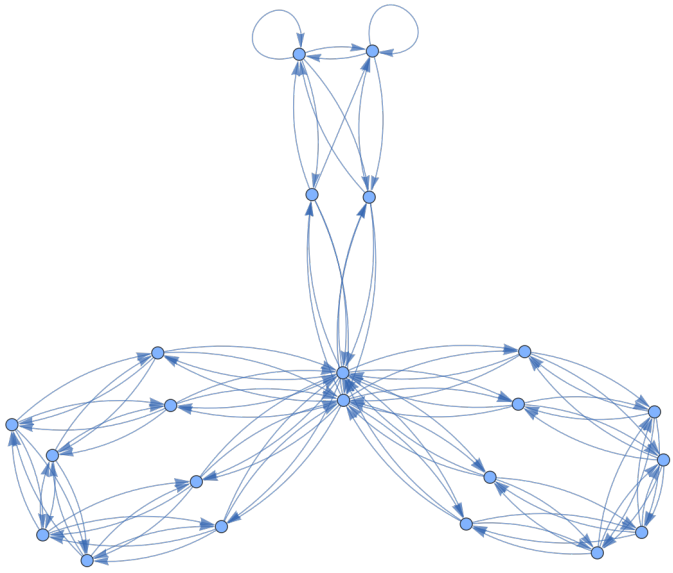
Interesting. Your interpretation of what he wanted is possibly what he meant. Most people did something else, including me.

In[88]:=
```
Cases[Flatten[Table[i^2 / (j^2 + 1), {i, 20}, {j, 20}]], _Integer]
```
Out[88]=
```
{2, 8, 5, 18, 32, 50, 20, 10, 2, 72, 98, 45, 128, 17, 162, 200, 80, 40, 8}
```

I added a Union to remove duplicates.

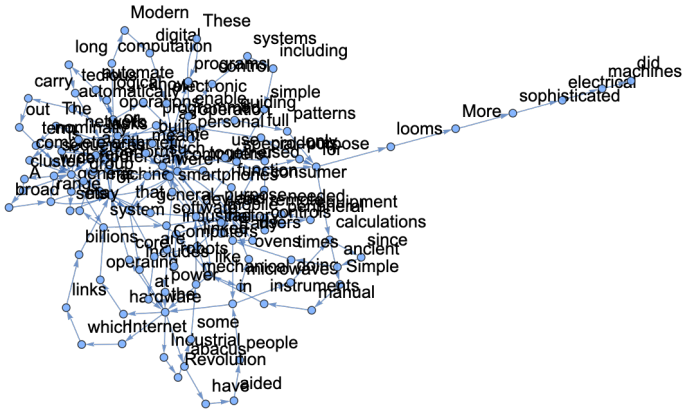
In[89]:=
```
Graph[Rule @@@ Partition[Table[Mod[n^2 + n, 100], {n, 100}], 2, 1]]
```

Out[89]=



In[90]:=
```
Graph[Rule @@@ Partition[Take[TextWords[WikipediaData["computers"]], 200], 2, 1],
 VertexLabels → Automatic]
```

Out[90]=



In[91]:=
```
f @@@ {{1, 2}, {7, 2}, {5, 4}}
```

Out[91]=
```
{f[1, 2], f[7, 2], f[5, 4]}
```

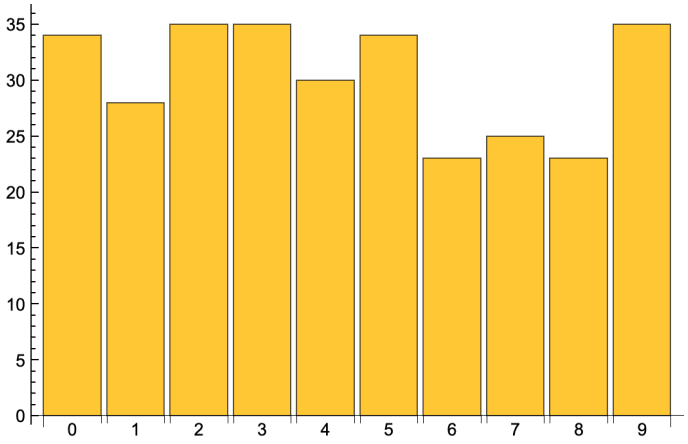
Exercises from EIWL3 Section 34

In[92]:=
```
Values[KeySort[Counts[IntegerDigits[3^100]]]]
```

Out[92]=
```
{7, 9, 9, 5, 1, 5, 4, 7, 1}
```

In[93]:=
```
BarChart[Values[Counts[IntegerDigits[2^1000]]], ChartLabels → Range[0, 9]]
```

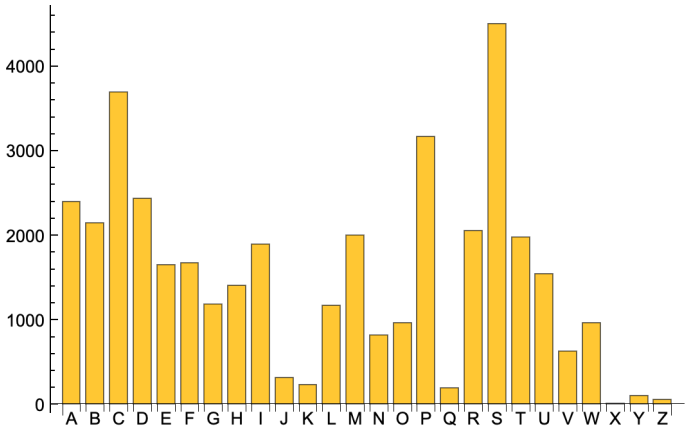
Out[93]=



The bar chart is jumbled. Execute counts all by itself, and you get
<|1 -> 34, 0 -> 28, 7 -> 35, 5 -> 35, 8 -> 30, 6 -> 34, 2 -> 23,
3 -> 25, 9 -> 23, 4 -> 35|>
The problem is that they aren't in any particular order.

In[94]:=
```
BarChart[Counts[ToUpperCase[StringTake[WordList[], 1]]],
 ChartLabels → CharacterRange["A", "Z"]]
```

Out[94]=



In[95]:=
```
Take[Sort[Counts[StringTake[WordList[], 1]]], -5]
```

Out[95]=
```
⟨| a → 2393, d → 2433, p → 3168, c → 3693, s → 4499 |⟩
```

In[96]:=
```
(#q + #u) / Total[#] &@LetterCounts[WikipediaData["computers"]] // N
```

Out[96]=
```
0.0338137
```

In[97]:=
```
Keys[
 Take[Sort[Counts[TextWords[ExampleData[{"Text", "AliceInWonderland"}]]]], -10]]
```

Out[97]=
```
{it, in, Alice, was, of, she, to, a, and, the}
```

Need to reverse this list. "the" is actually the most common of the first 10.