Hexi—PS17—2025 - 04 - 11

7 1/2 / 8 See comments on use of patterns on 2nd and 3rd pages.

Exercises from EIWL3 Section 39

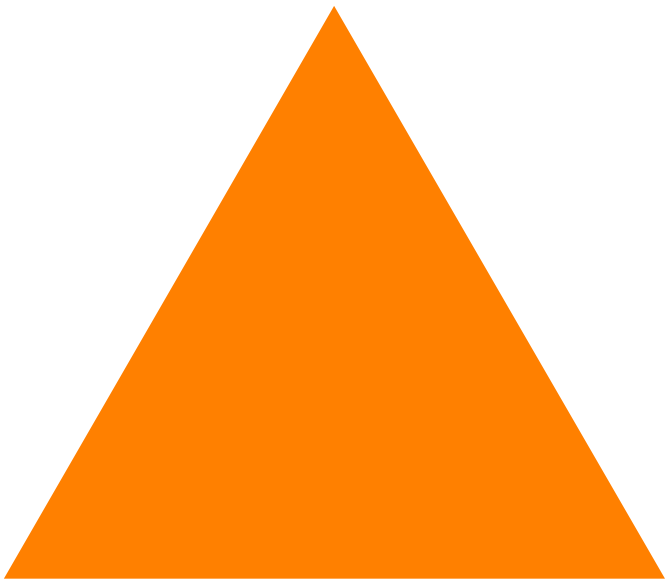
In[112]:=
```
{x, x + 1, x + 2, x^2} /. x → RandomInteger[100]
```
Out[112]=
```
{99, 100, 101, 9801}
```

In[113]:=
```
{x, x + 1, x + 2, x^2} /. x :→ RandomInteger[100]
```
Out[113]=
```
{86, 53, 43, 8281}
```

Exercises from EIWL3 Section 40

In[114]:=
```
f[n_] := n^2;
f[11]
```
Out[115]=
```
144
```

In[116]:=
```
poly[n_] := Graphics[{Orange, RegularPolygon[n]}];
poly[3]
```
Out[117]=



In[118]:=
```
Clear[f]
f[x_, y_] = {y, x};
f[a, b]
```
Out[120]=
```
{b, a}
```

In[121]:=
```
Clear[f]
f[x_, y_] := x y / (x + y);
f[4, 5]
```
Out[123]=
$$\frac{20}{9}$$

In[124]:=
```
Clear[f]
f[x_, y_] := {x + y, x - y, x / y};
f[4, 5]
```
Out[126]=
$$\left\{9, -1, \frac{4}{5}\right\}$$

In[127]:=
```
evenodd[x_] := Which[x == 0, Red, EvenQ[x], Black, OddQ[x], White];
evenodd[1]
evenodd[0]
evenodd[4]
```

Wolfram had a different idea on how these were to be done. See my solution. The Which is nice though.

Out[128]=

Out[129]=

Out[130]=

In[131]:=
```
Clear[f]
f[x_, y_, z_] := Which[x == 1, y + z, x == 2, y z, x == 3, y^z];
f[1, 9, 5]
```

Same comment.

Out[133]=
```
14
```

In[134]:=
```
Clear[f]
f[n_] := If[n == 0 || n == 1, 1, f[n - 1] + f[n - 2]];
f[1]
f[5]
```

And again. He has another way of doing these that emphasizes patterns.

Out[136]=
```
1
```

Out[137]=
```
8
```

In[138]:=
```
animal[name_] := EntityValue[Interpreter["Animal"][name], "Image"];
animal["Cat"]
```

Out[139]=

In[140]:=
```
nearwords[String_, n_] := Nearest[WordList[], String, n];
nearwords["cat", 5]
```

Out[141]=
```
{cat, at, bat, cab, cad}
```

Same comment.