In[301]:=
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SetDirectory[NotebookDirectory[]];

layers = 6;
output = {};
gradient = "SolarColors";
eqTriangle[length_, Δx_, Δy_, Δz_] :=
  Graphics3D[{Opacity[0], EdgeForm[Thick], Polygon[{{(-length / 2) + Δx, Δy, Δz},
      {Δx, (length * Sqrt[3] / 2) + Δy, Δz}, {(length / 2) + Δx, Δy, Δz}}]}];
radius[length_] := length / Sqrt[3];
(*pyramidUp[length_,Δx_,Δy_,Δz_]:=Graphics3D[
   {Opacity[.2],EdgeForm[Thick],Tetrahedron[{{(radius[length])*Cos[7π/6]+Δx,
       (radius[length])*Sin[7π/6]+Δy,(radius[length])*Sin[7π/6]+Δz},
      {Δx,(radius[length])+Δy,(radius[length])*Sin[7π/6]+Δz},
      {(radius[length])*Cos[11π/6]+Δx,(radius[length])*Sin[11π/6]+Δy,
       (radius[length])*Sin[7π/6]+Δz},{Δx,Δy,(radius[length])+Δz}}]}];*)
pyramidUp[length_, Δx_, Δy_, Δz_, numLayers_] := Graphics3D[
   {Opacity[(layers - numLayers) / 15], EdgeForm[{Thick}], ColorData[gradient][
     numLayers], Tetrahedron[{{(radius[length]) * Cos[7 π / 6] + Δx,
       (radius[length]) * Sin[7 π / 6] + Δy, (radius[length]) * Sin[7 π / 6] + Δz},
      {Δx, (radius[length]) + Δy, (radius[length]) * Sin[7 π / 6] + Δz},
      {(radius[length]) * Cos[11 π / 6] + Δx, (radius[length]) * Sin[11 π / 6] + Δy,
       (radius[length]) * Sin[7 π / 6] + Δz}, {Δx, Δy, (radius[length]) + Δz}}]}];
(*pyramidDown[length_,Δx_,Δy_,Δz_]:=
  Graphics3D[
   {Opacity[.2],EdgeForm[{Thick}],Tetrahedron[{{(radius[length])*Cos[7π/6]+Δx,
       (radius[length])*Sin[7π/6]+Δy,-(radius[length])*Sin[7π/6]+Δz},
      {Δx,(radius[length])+Δy,-(radius[length])*Sin[7π/6]+Δz},
      {(radius[length])*Cos[11π/6]+Δx,(radius[length])*Sin[11π/6]+Δy,
       -(radius[length])*Sin[7π/6]+Δz},{Δx,Δy,-(radius[length])+Δz}}]}];*)
pyramidDown[length_, Δx_, Δy_, Δz_, numLayers_] := Graphics3D[
   {Opacity[(layers - numLayers) / 15], EdgeForm[{Thick}], ColorData[gradient][
     numLayers], Tetrahedron[{{(radius[length]) * Cos[7 π / 6] + Δx,
       (radius[length]) * Sin[7 π / 6] + Δy, -(radius[length]) * Sin[7 π / 6] + Δz},
      {Δx, (radius[length]) + Δy, -(radius[length]) * Sin[7 π / 6] + Δz},
      {(radius[length]) * Cos[11 π / 6] + Δx, (radius[length]) * Sin[11 π / 6] + Δy,
       -(radius[length]) * Sin[7 π / 6] + Δz}, {Δx, Δy, -(radius[length]) + Δz}}]}];
(*serpPyramid[length_,Δx_,Δy_,Δz_,numLayers_]:=
  If[numLayers==layers,AppendTo[output,pyramidUp[length,Δx,Δy,Δz]];
   serpPyramid[length/2,Δx,Δy,Δz,numLayers-1],
   AppendTo[output,pyramidDown[length,Δx,Δy,Δz]];If[numLayers==0,
    "Base reached",serpPyramid[length/2,(radius[length])*Cos[7π/6]+Δx,
     (radius[length])*Sin[7π/6]+Δy,(radius[length])*Sin[7π/6]+Δz,numLayers-1];
    serpPyramid[length/2,Δx,(radius[length])+Δy,(radius[length])*Sin[7π/6]+Δz,
     numLayers-1];serpPyramid[length/2,(radius[length])*Cos[11π/6]+Δx,
     (radius[length])*Sin[11π/6]+Δy,(radius[length])*Sin[7π/6]+Δz,numLayers-1];
    serpPyramid[length/2,Δx,Δy,(radius[length])+Δz,numLayers-1]]];*)
serpPyramid[length_, Δx_, Δy_, Δz_, numLayers_] :=
  If[numLayers == layers, AppendTo[output, {pyramidUp[length, Δx, Δy, Δz]}];
   serpPyramid[length / 2, Δx, Δy, Δz, numLayers - 1],
   AppendTo[output, {pyramidDown[length, Δx, Δy, Δz, numLayers]}]; If[numLayers == 0,
    "Base reached", serpPyramid[length / 2, (radius[length]) * Cos[7 π / 6] + Δx,
     (radius[length]) * Sin[7 π / 6] + Δy, (radius[length]) * Sin[7 π / 6] + Δz,
     numLayers - 1]; serpPyramid[length / 2, Δx, (radius[length]) + Δy,
     (radius[length]) * Sin[7 π / 6] + Δz, numLayers - 1]; serpPyramid[length / 2,
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      (radius[length]) * Cos[11 π / 6] + Δx, (radius[length]) * Sin[11 π / 6] + Δy,
      (radius[length]) * Sin[7 π / 6] + Δz, numLayers - 1];
    serpPyramid[length / 2, Δx, Δy, (radius[length]) + Δz, numLayers - 1]]];

serpPyramid[16, 20, 0, 0, layers];
output;
Show[{output}]
Export["Sierpinski.Pyramid.pdf", EvaluationNotebook[]];
Export["Sierpinski.Pyramid.jpg", EvaluationNotebook[]];
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Out[312]=