Pensieve header: October 20: Some Hochschild Homology.

Today. Trees from triangulations, then some Hochschild homology, then whatever you may suggest, then EIWL 9-12, then, if time, Patterns.

Topics (in no particular order). Whatever you may suggest; whatever comes to my mind; ~~the Fibonacci numbers~~; the Catalan numbers; ~~the Jones polynomial~~; ~~a more efficient Jones algorithm~~; ~~a riddle on spheres~~; Khovanov homology; Γ-calculus; the Hopf fibration; Hilbert's 13th problem; non-commutative Gaussian elimination; free Lie algebras; the Baker-Campbell-Hausdorff formula; wacky numbers; an order 4 torus; the Schwarz Lantern; knot colourings; the Temperley-Lieb pairing; the dodecahedral link; sound experiments; barycentric subdivisions; a Peano curve; braid closures and Vogel's algorithm; the insolubility of the quintic; phase portraits; the Mandelbrot set; shadows of the Cantor aerogel; quilt plots; some image transformations; De Bruijn graphs; the Riemann series theorem; finite type invariants and the Willerton fish; ~~the Towers of Hanoi~~; Hochschild homology of (some) coalgebras; convolutions and image improvements.

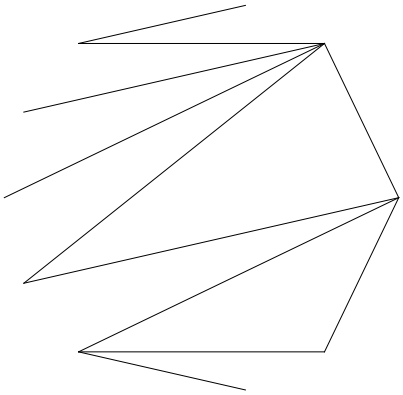
An Image Manipulation Challenge

The image at http://drorbn.net/bbs/show?shot=17-1750-171016-111042.jpg is pathetic. Can you improve it? Whatever you do, should also work well with all other images at http://drorbn.net/bbs/show.php?prefix=17-1750.

Trees from Triangulations

```
triang =
  ds[d[9, 11], d[9, 12], d[0, 12], d[0, 9], d[2, 7], d[2, 6], d[3, 5], d[2, 5], d[2, 8], d[0, 8], d[0, 2]];
```

```
triang /. ds[ls___] → Graphics[{ls}] /. d[i_, j_] :↦ Line[{i, j}] /. j_Integer :↦ {Cos[2 π j / 14], Sin[2 π j / 14]}
```



```
Last[d[0, 13] (Times @@ triang) ∏_{j=0}^{12} e[j, j + 1, ●] //.
   e[i_, j_, t1_] e[j_, k_, t2_] d[i_, k_] :↦ e[i, k, p[t1, t2]]] // TreeForm
```

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