# Supplement to Lecture 9

## Modeling Fractals

# Modeling Notes

- Geometric
  - Meshes  --- Supp. Lec 5
  - Hierarchical --- Supp. Lec 12
  - Curves and Surfaces  --- Supp. Lec 10, 11
- Procedural
  - Particle Systems  --- Graduate Comp. Graphics.
  - Fractal --- This Supp. Lec 9

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Notes and figures from   *Ed Angel: Interactive Computer Graphics, 6th Ed., 2012 © Addison Wesley*
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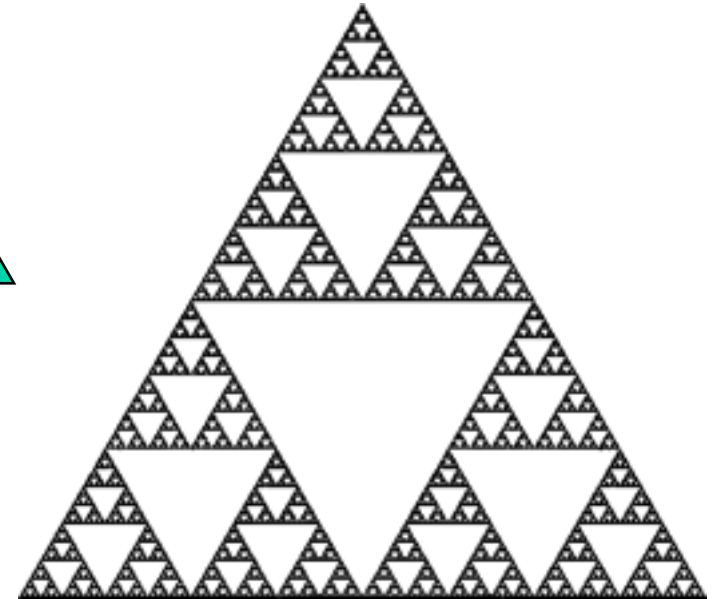Tuesday, February 12, 13

# Sierpinski Gasket

Rule based:
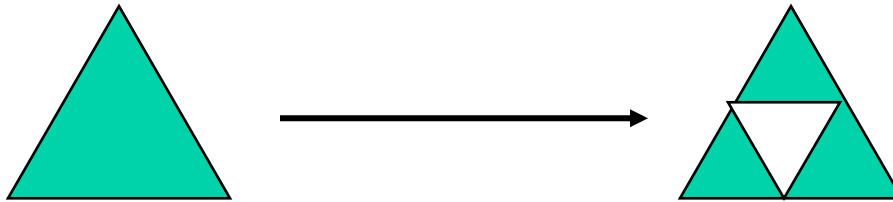


Repeat n times. As n $\rightarrow \infty$

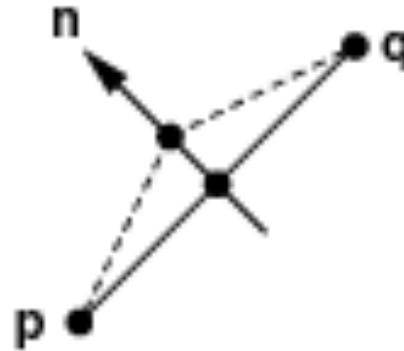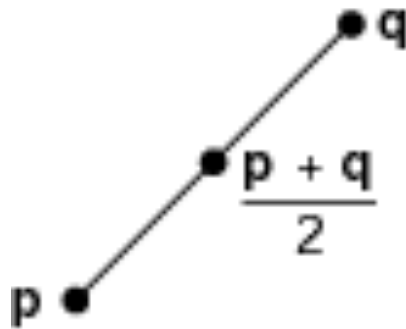 Area$\rightarrow$0

 Perimeter $\rightarrow \infty$

Not a normal geometric object

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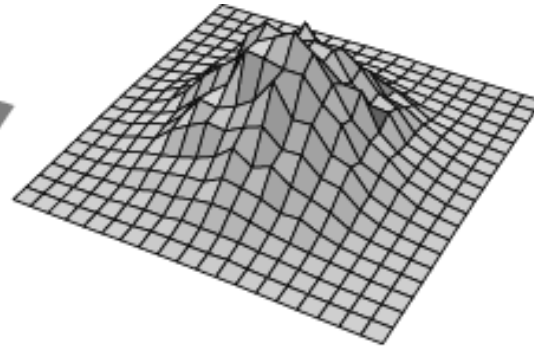http://www.cs.utexas.edu/~bajaj/
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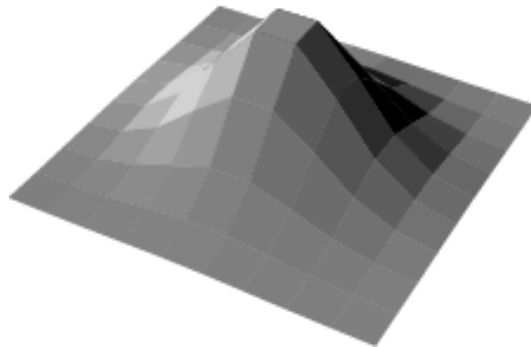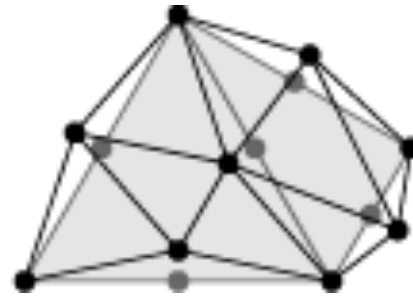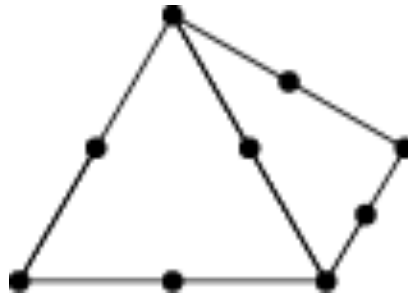
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# Midpoint Subdivision
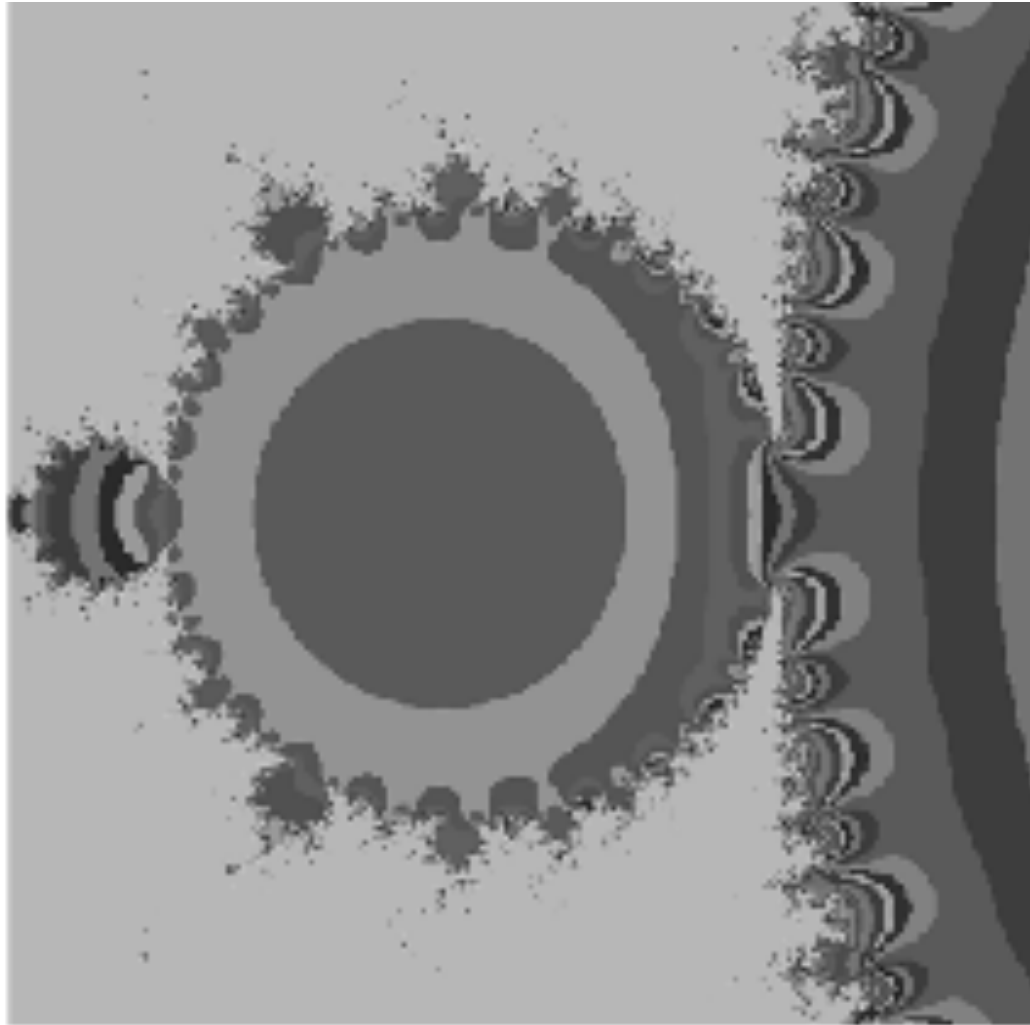


Randomize displacement using a Gaussian random number generator. Reduce displacement each iteration by reducing variance of generator.

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# Fractal Mountains

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# Mandelbrot

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