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**Better than optimal by taking a limit?**

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Summary: Designing an optimal Norman window is a standard calculus exercise. How much more difficult (or interesting) is its generalization to deploying multiple semicircles along the head (or along head and sill, or head and jambs)? What if we use shapes beside semi-circles? As the number of copies of the shape increases and the optimal Norman windows approach a rectangular shape, what proportions arise? How does the perimeter of the limiting rectangle compare to the limit of the perimeters? These questions provide challenging optimization problems for students and the graphical depiction of the geometry of these window sequences illustrates more vividly than sequences of numbers, the concept of limit.

*Classification:* N65 I35 I45 I65

*Keywords:* optimization problems; Norman windows; semicircles; perimeters

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