Consider regions of the plane that can contain all free n-ominoes.

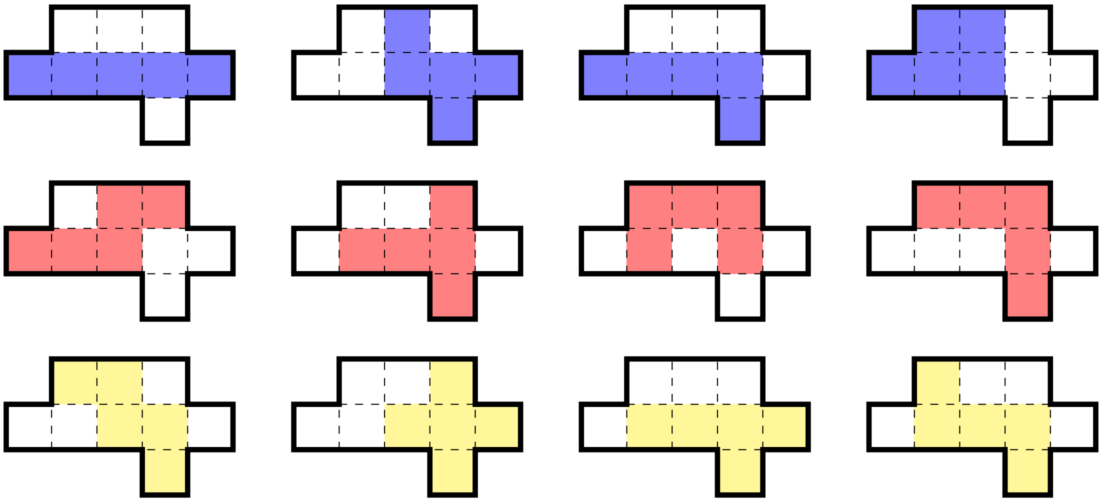

Figure 1: A computer search has proven that a nine-cell region of the plane is the smallest possible region that contains all 5-ominoes.

Question. What is the smallest region of the plane (with respect to area) that can contain all free n-ominoes?

Related.

1. What about fixed polyominoes? One-sided polyominoes (those that can be rotated but not flipped)?
2. What about other polyforms such as polyhexes or polycubes?
3. What if the region must be convex?
4. What is the smallest convex region that contains all length n polysticks (along grid lines)?
5. How many distinct minimal covering sets (call this $c(n)$)?
6. What is the asymptotic growth in area of such a region? (Somewhere between linear and quadratic.)
7. Is there a limiting shape?
8. Alec Jones wonders if there always exists a covering set such that a single cell is used by all polyominoes.

Note. If $c(n)$ counts the number of distinct minimal covering sets of n-ominoes, then $c(1) = c(2) = c(3) = 1$, $c(4) = c(5) = 2$, and $c(6) = 14$.

References.

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`https://en.wikipedia.org/wiki/Moser%27s_worm_problem`

`https://en.wikipedia.org/wiki/Polystick`

`https://math.stackexchange.com/q/2831675/121988`