Fence Me In

The nine houses below are all fenced together in 1 area. Can you draw 2 MORE SQUARES in such a way that each of the nine houses are fenced inside their own private area?



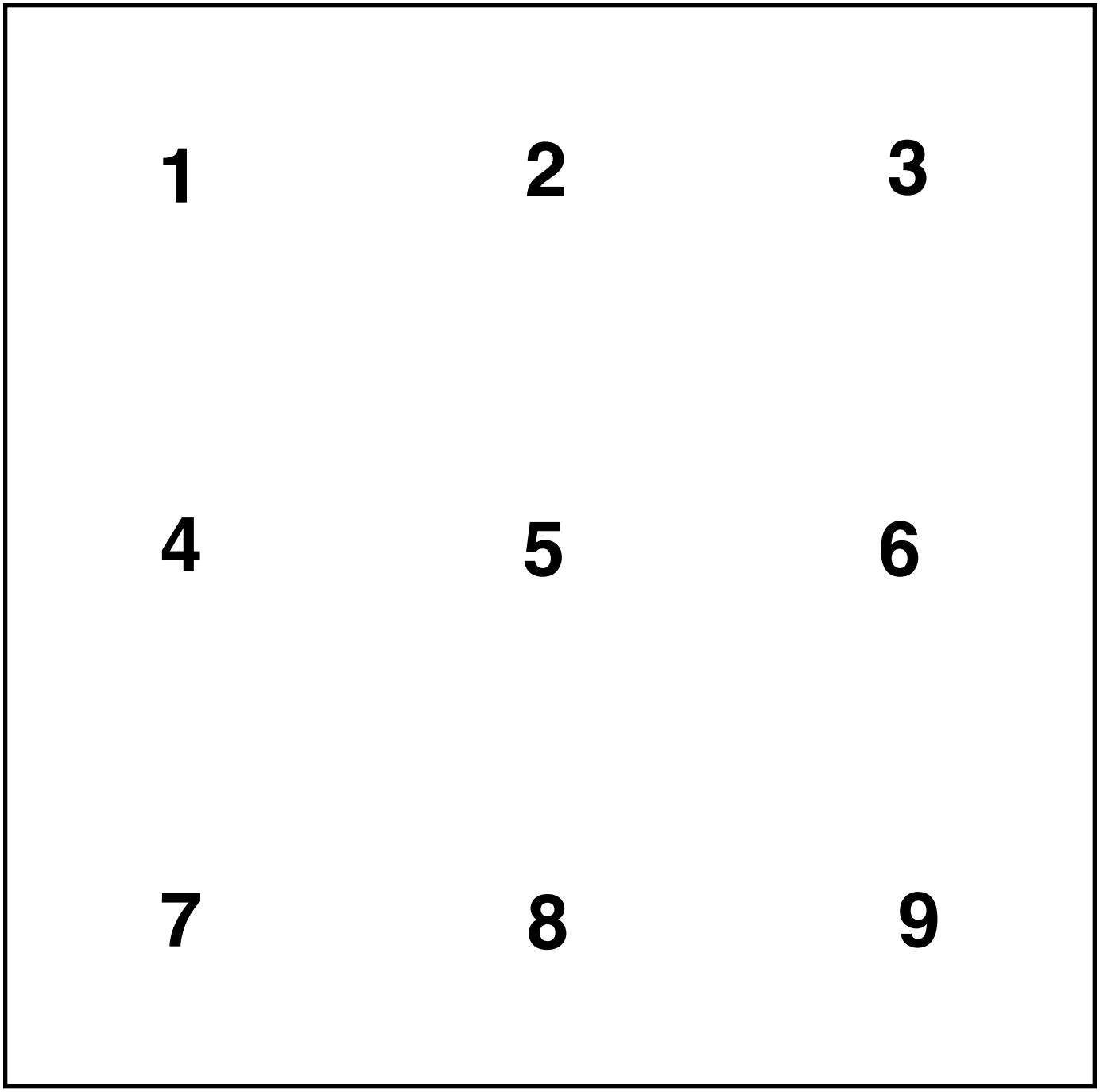






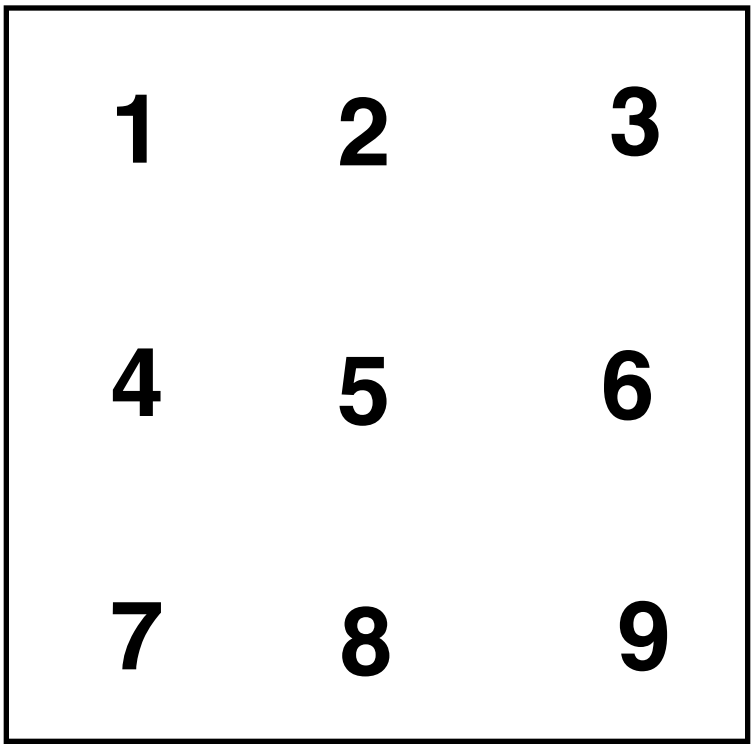
Fence Me In

The nine numbers below are all fenced together in 1 area. Can you draw 2 MORE SQUARES in such a way that each of the nine numbers are fenced inside their own private area?



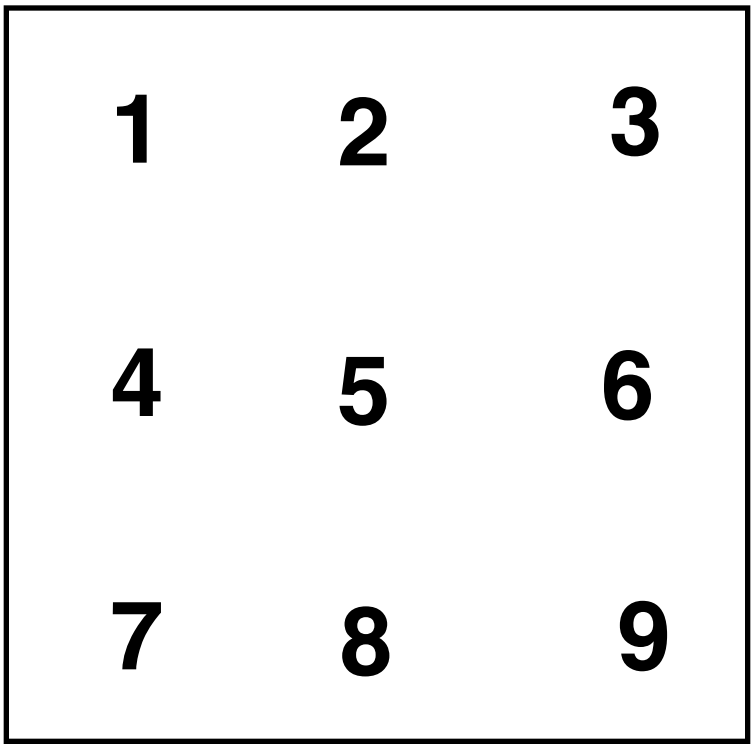
Fence Me In

The nine numbers below are all fenced together in 1 area. Can you draw 2 MORE SQUARES in such a way that each of the nine numbers are fenced inside their own private area?



Fence Me In

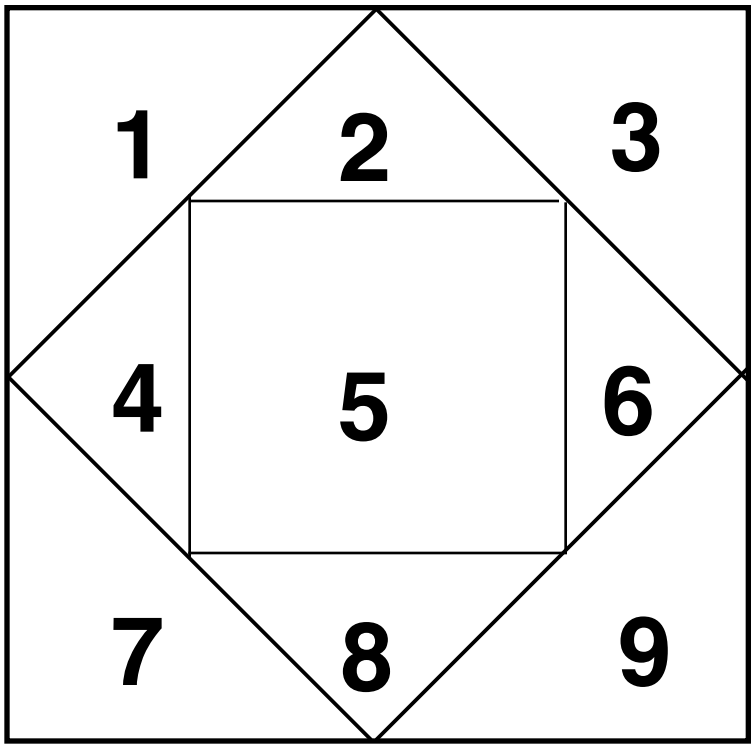
The 9 numbers below are all fenced together in 1 area. Can you draw 2 MORE SQUARES in such a way that each of the 9 numbers are fenced inside their own private area?



Teacher notes
I have provided a large puzzle that works well for younger students and a smaller version that fits 2 per page.

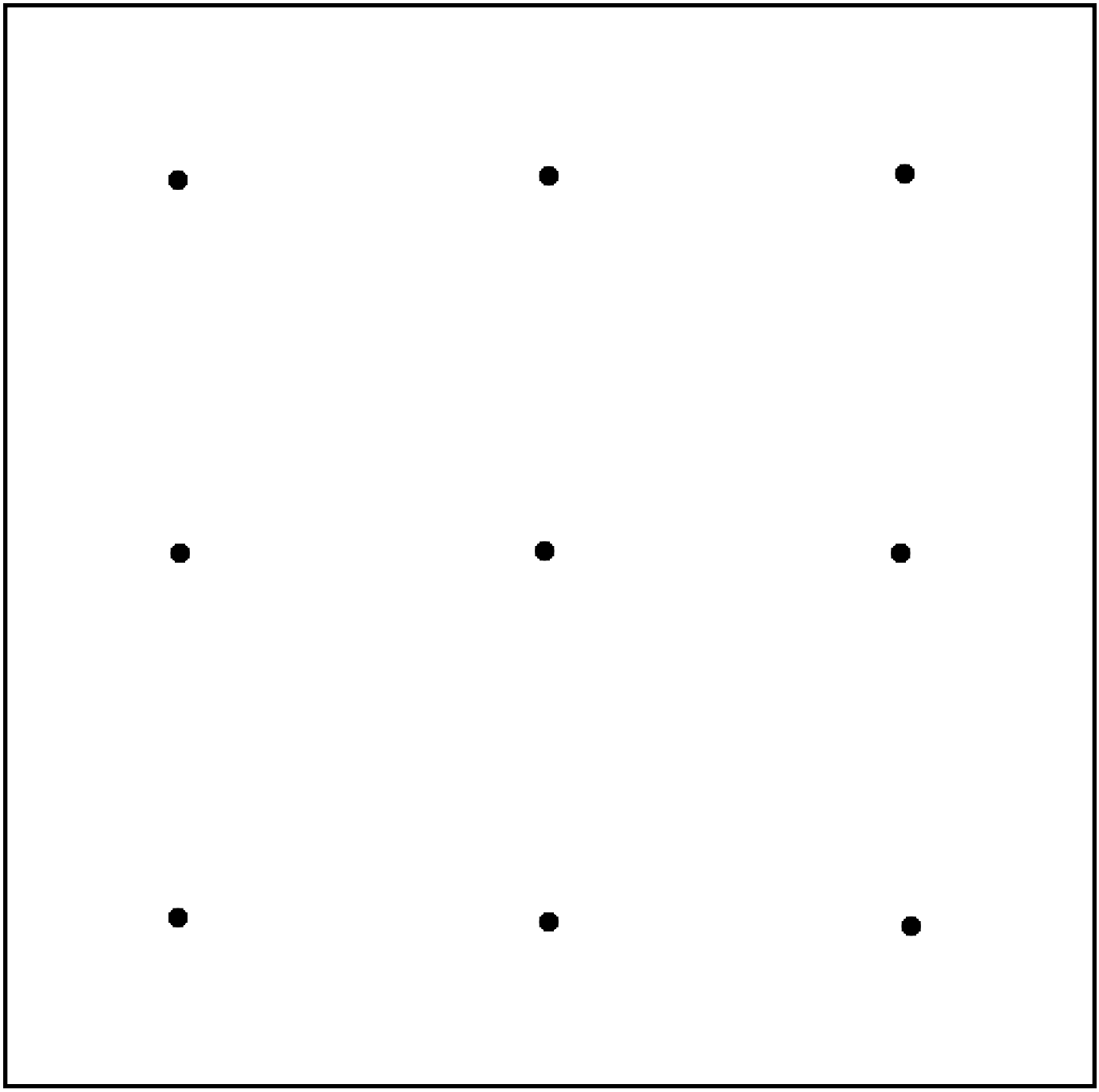
I also have provided a dot grid on the last page. If you have some small stickers you like. stick them over the dots and give the puzzle a theme.

Solution To Fence Me In:

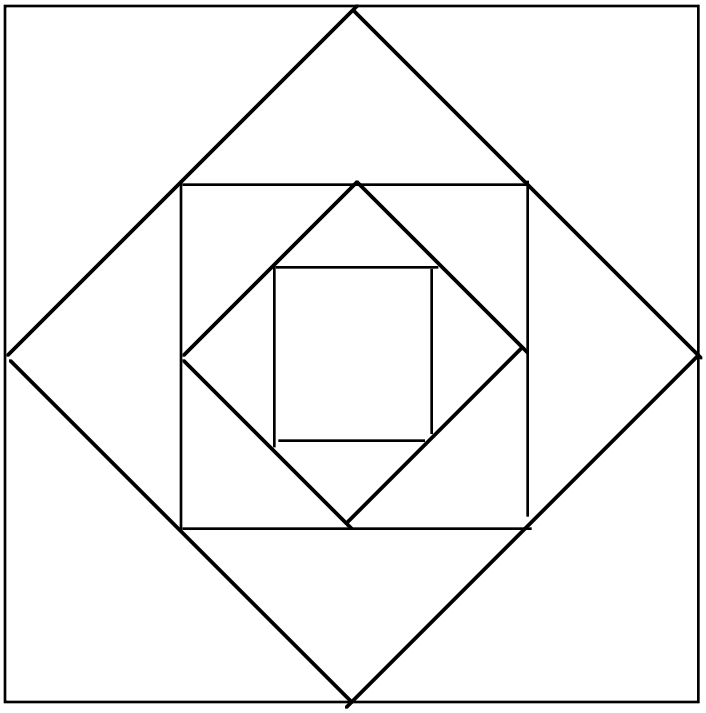


Fence Me In

The nine objects below are all fenced together in 1 area. Can you draw 2 MORE SQUARES in such a way that each of the nine objects are fenced inside their own private area.?



Math Background



The square within a square within a square within a .... etc. demonstrates an important concept in advanced math courses. If the initial side of the square is 2 units in length, then the side of the first inscribed square is $\sqrt{2}$. You could keep inscribing a square within a square within a square .... ect. Calculus students see this figure used in calculus to develop the concept of continued fractions and infinite series.

A continued fraction

$$a_0 + \cfrac{1}{a_1 + \cfrac{1}{a_3 + \cfrac{1}{a_4 + \cfrac{1}{a_5 + \cfrac{1}{a_6 + \cfrac{1}{a_7 + ...}}}}}}$$

$\sqrt{2}$ expressed as a continued fraction

$$\sqrt{2} = 1 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + ...}}}}}}$$

Why do I introduce you to this idea.

Because this puzzle is the first step in the long, long road to calculus. Some of the students in your classroom will make that trip and at one point they will jump up and say “hey, my teacher showed me something like this drawing in the 5th grade.” You will have started them on that road.

For this reason you can now say you teach Pre Calculus

I bet you never thought you would be saying that