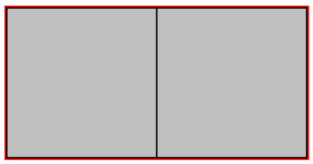
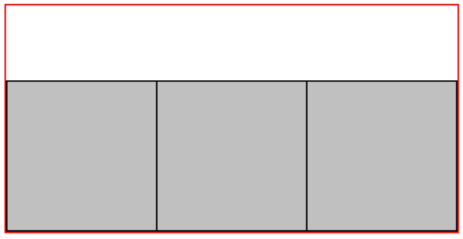
Squares in Dominos

For n = 1, 2 or 3, we only have the trivial solutions.

n = 1

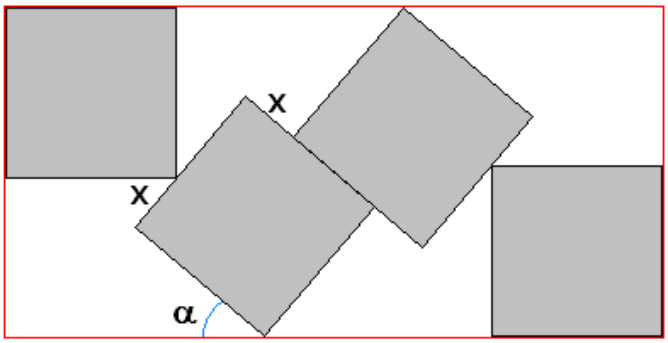


n = 2



n = 3

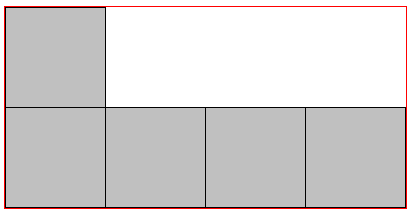
For n = 4 the best solution is a slightly tilted diagonal strip between two corner squares.



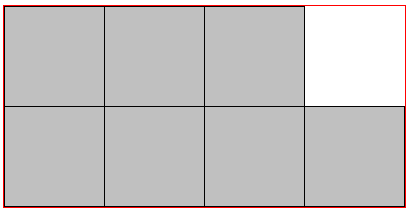
α = 40.52...°
x = 0.3691...

n = 4

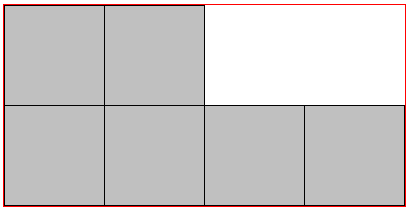
Below are the best known solutions for $n \leq 25$. Note that $n = 19$ is obtained from $n = 9$, with 10 added squares. The solution for $n = 23$ is likewise obtained from $n = 12$ with 11 added squares.



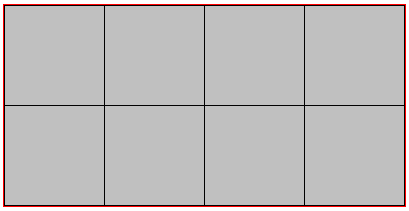
n = 5



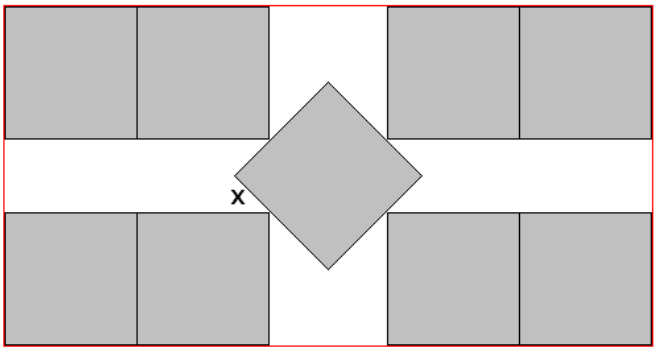
n = 7



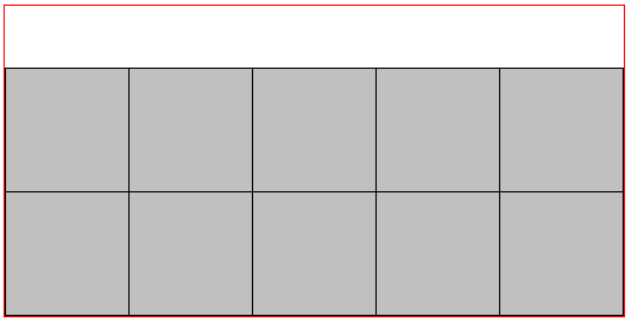
n = 6



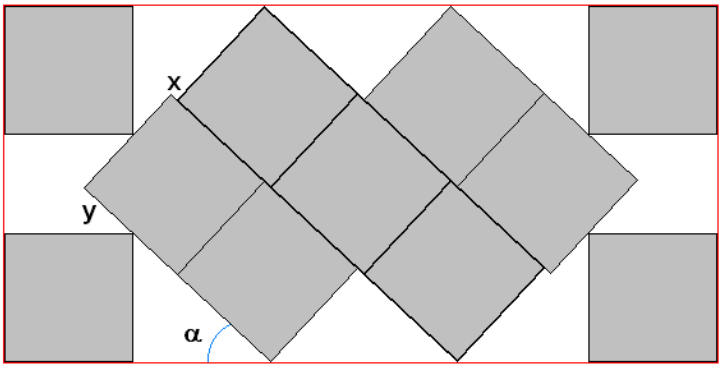
n = 8



$x = 1/3$ $4 + 2\sqrt{2}/3$ n = 9



n = 10

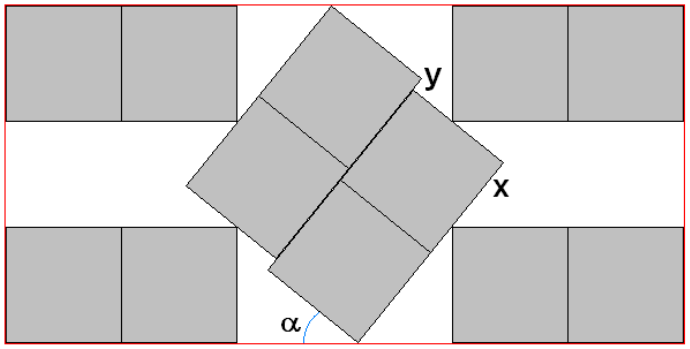


2.7794...

5.5588...

α = 43.08...°
x = 0.0694...
y = 0.5359...

n = 11

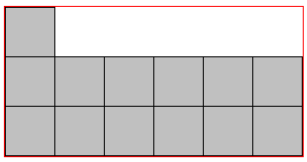


2.9164...

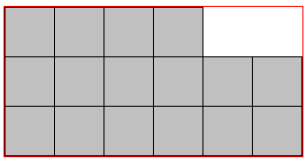
5.8328...

α = 39.13...°
x = 0.7108...
y = 0.1325..

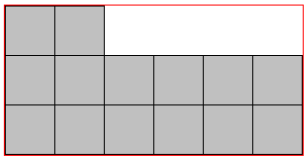
n = 12



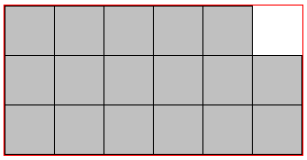
n = 13



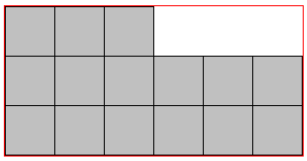
n = 16



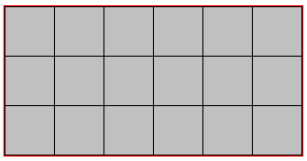
n = 14



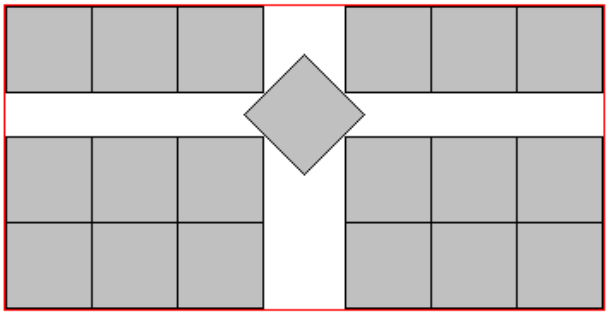
n = 17



n = 15



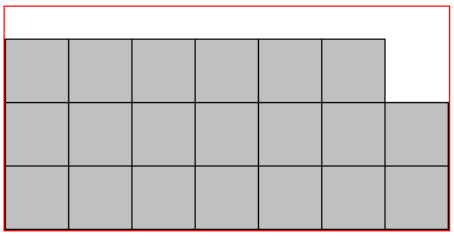
n = 18



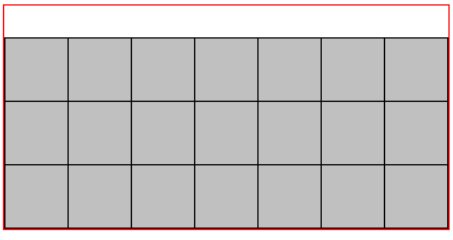
$3 + \sqrt{2}/3$

$6 + 2\sqrt{2}/3$

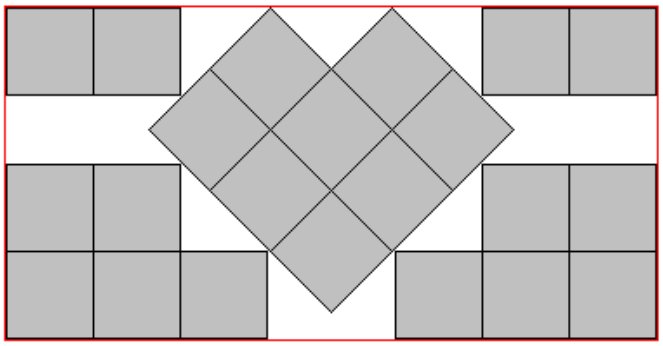
n = 19



n = 20



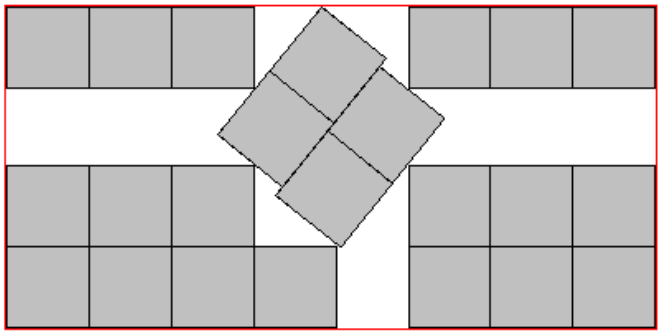
n = 21



$7/3 + \sqrt{2}$

$14/3 + 2\sqrt{2}$

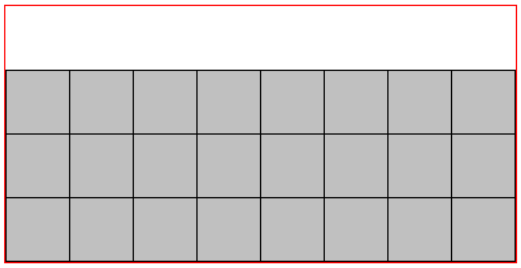
n = 22



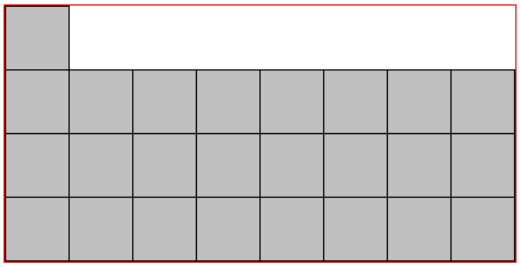
3.9164...

7.8328...

n = 23



n = 24



n = 25