Consider tilings of the $n \times n$ grid up to D_8 action where the tiles are diagonals.

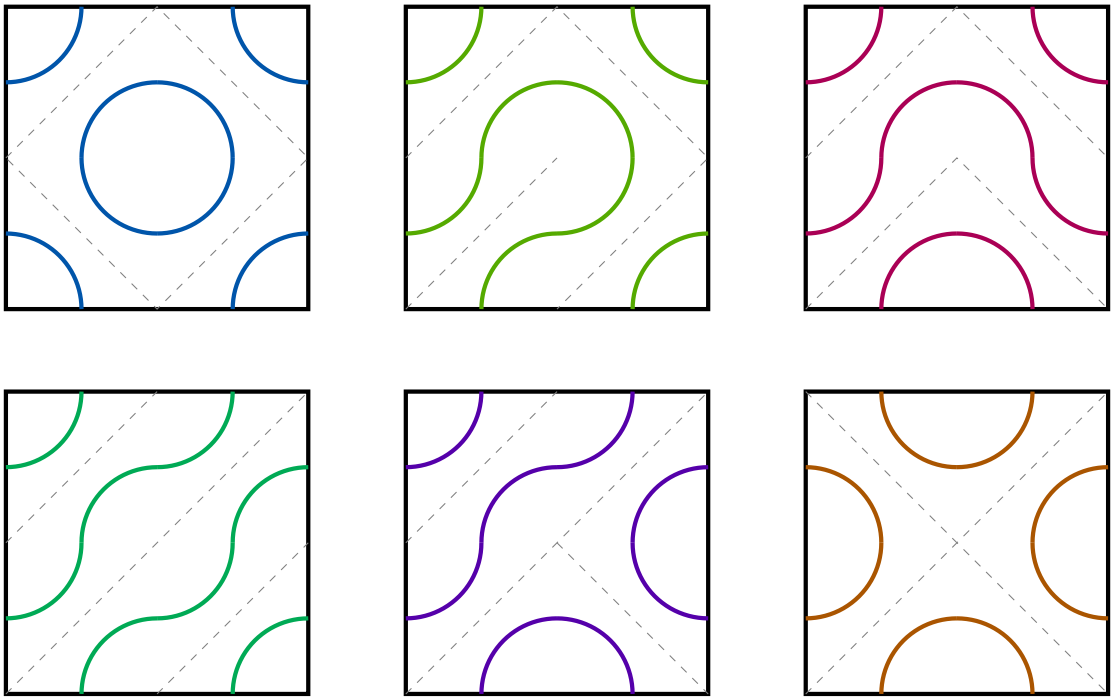

Figure 1: An example of the $a(2) = 6$ different ways to fill the 2×2 grid with diagonal tiles (up to dihedral action).

Question. How many such tilings exist?

Related.

1. What if grids are only counted up to C_4 (rotation) action?
2. What if this is counted on the torus/cylinder/Möbius strip?
3. What if each tile can have no diagonals or both diagonals?
4. What if tiles are black or white?
5. Is there an obvious bijection between the results on the $2n \times 2n$ grid for black/white versus diagonal tile types?

References.

`https://oeis.org/A295229`