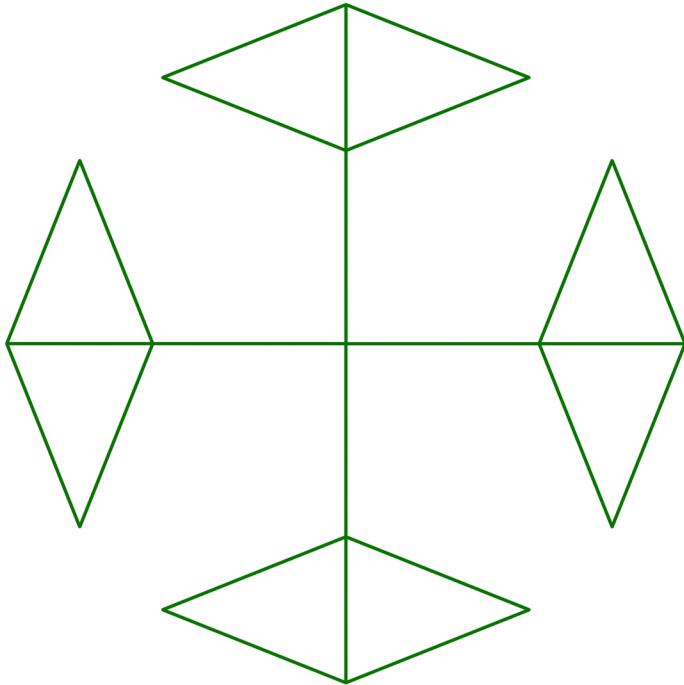


1



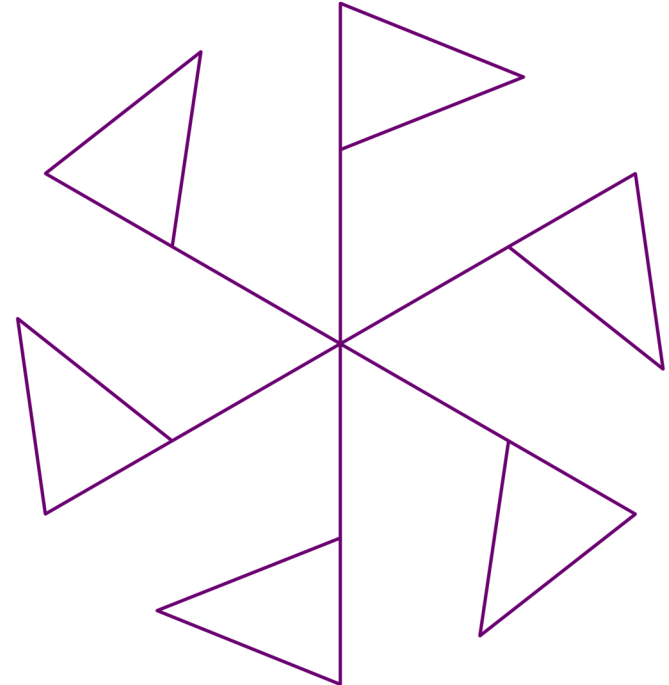
How many lines of mirror symmetry does this figure have?
Draw them.

Answer:

What is the order of rotational symmetry?

Answer:

2



How many lines of mirror symmetry does this figure have?

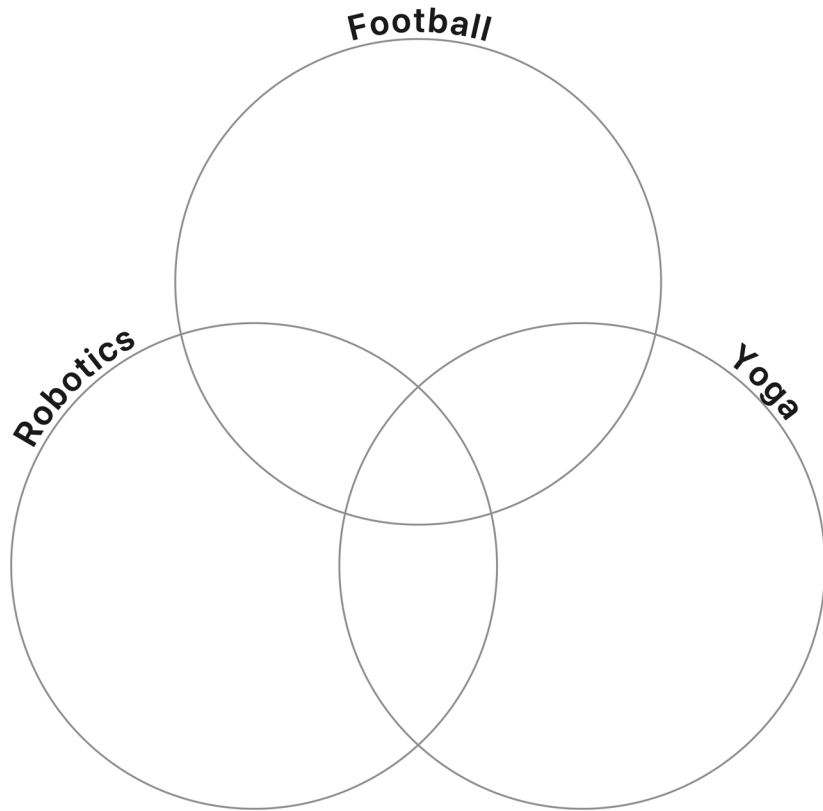
Answer:

What is the order of rotational symmetry?

Answer:

3

Look at this **Venn diagram** of after-school clubs.
Shade the area for children who do **football or yoga**, but **NOT robotics**.



4

Find :

$$4 \times (3 + \square) = 20$$

$$45 - (8 - \square) = 40$$

5

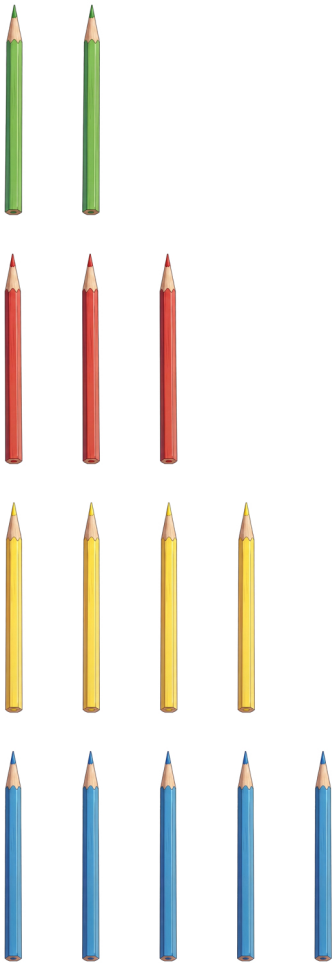
An elf is pulling socks from a dark corner of his wardrobe. He has socks in **two colors** (red and green) and **two patterns** (stripes and dots).
 How many socks must he pull out to be certain that **at least two of them have the same color or pattern** (or both)?



Answer:

6

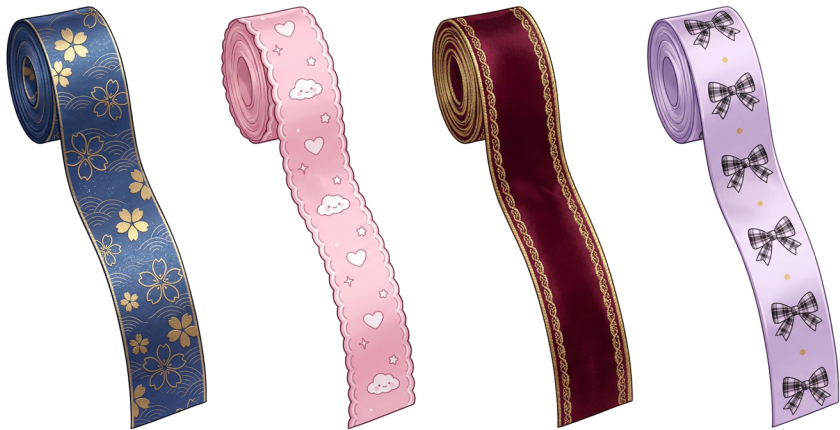
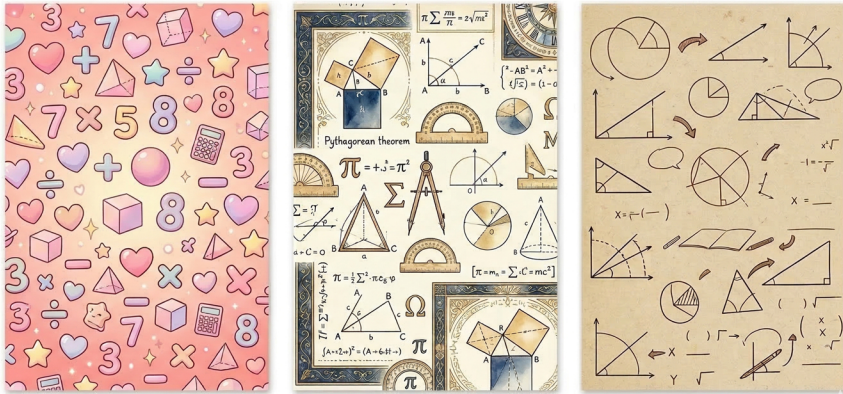
In a box, you have **2 green**, **3 red**, **4 yellow**, and **5 blue** pencils.
 How many pencils do you need to take out to be certain you are holding **at least 2 red** ones?



Answer:

7

A gift shop offers **3 colors of wrapping paper** and **4 styles of ribbon**. If a customer picks one paper and one ribbon for their box, how many different gift-wrap combinations are possible?



Answer:

8

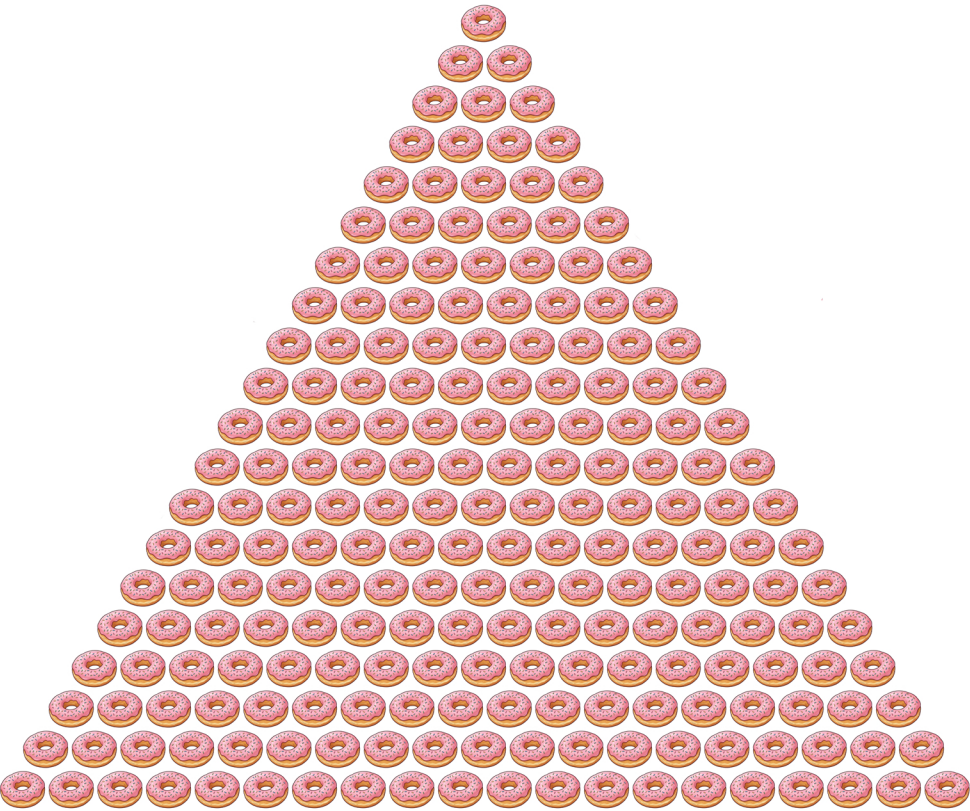
A chef stacks a cake with **3 unique layers**: Raspberry, Chocolate, and Blueberry. If each layer must be used once, how many different layer orderings are possible?



Answer:

9

A donut-hungry monster eats **1 donut**, then **2 more**, then **3 more**... He keeps going until he eats a final snack of **20 donuts**. How many donuts did the monster eat in total?



Answer:

10

It's Saturday now. What day of week will it be after **55 days**?

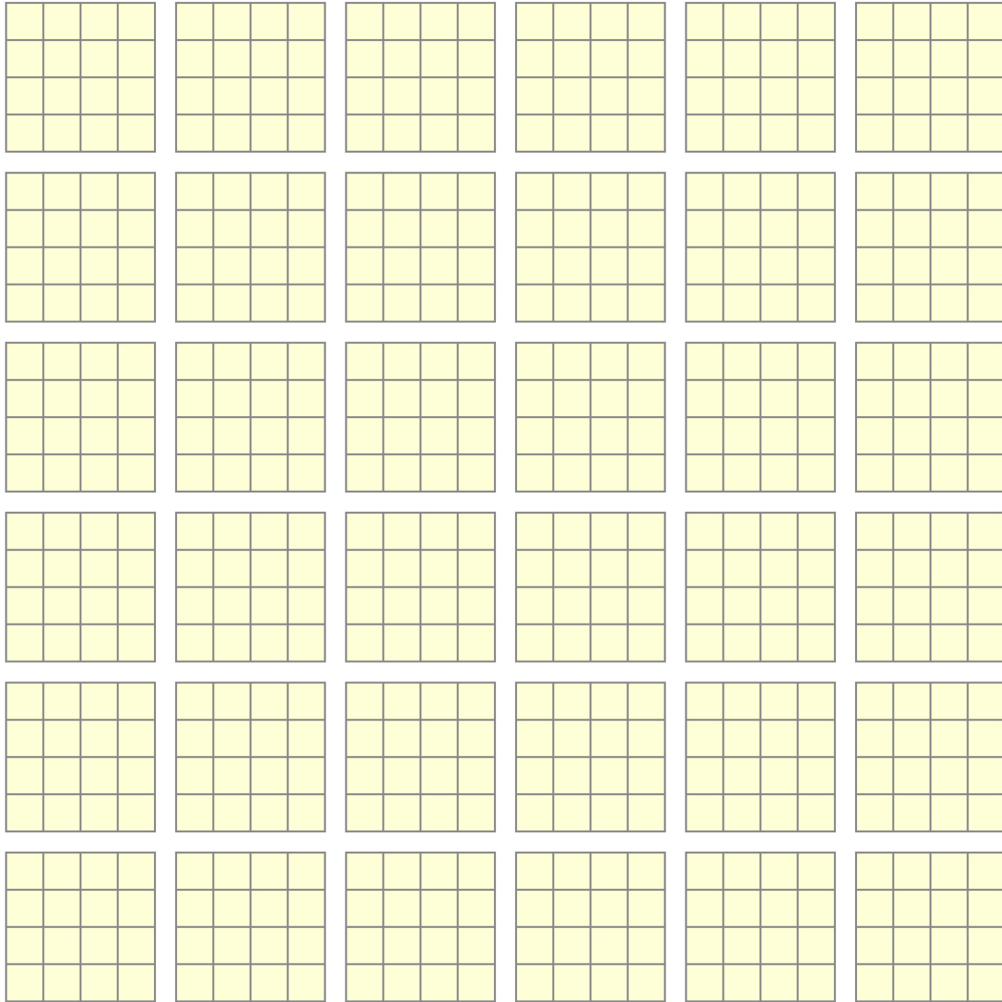
Hint: use a multiplication table if you need to.



Answer:

11

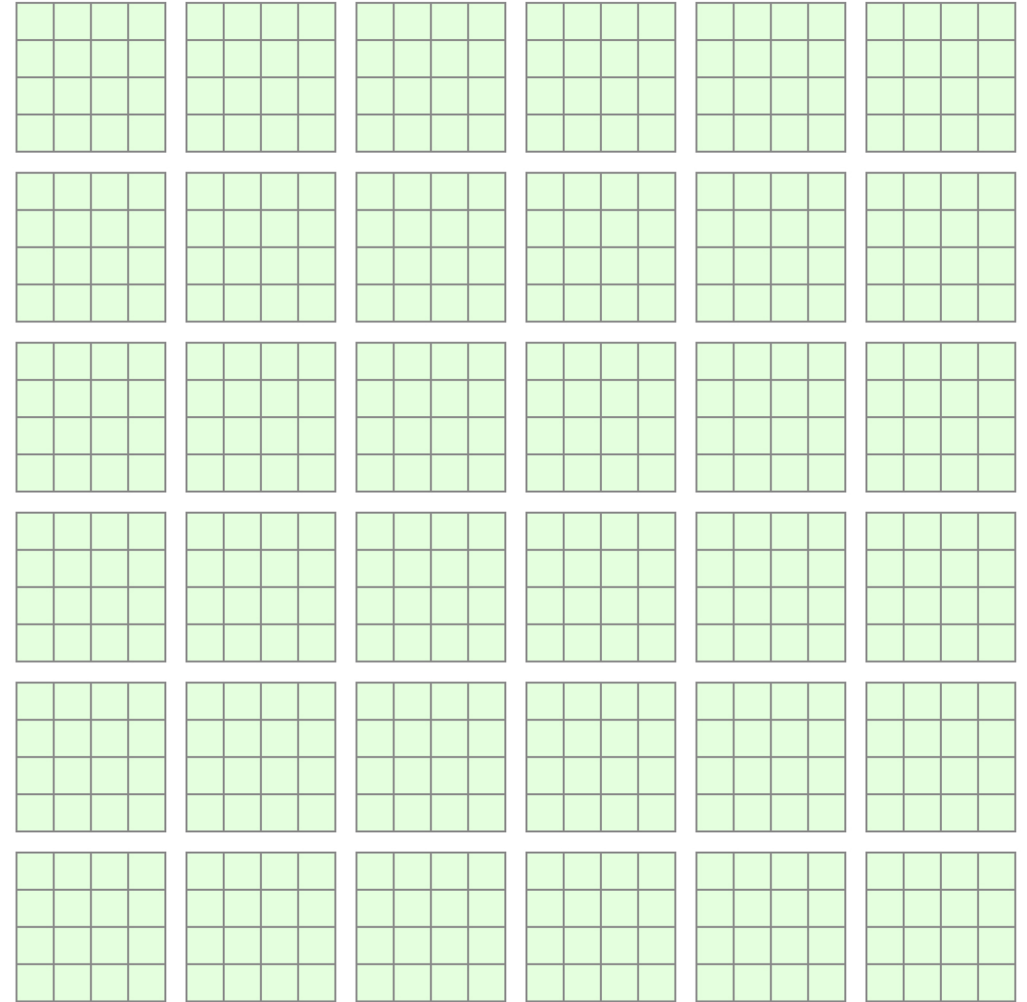
Colour 1 small square in a 4x4 grid. How many ways to do it?
Two patterns count as **the same** if a **rotation** make them match.



Answer:

12

Colour 1 small square in a 4x4 grid. How many ways to do it?
Two patterns count as **the same** if a **rotation and/or mirror flip** make them match.



Answer:

13

There are **30 gardens** in total on one street. Every garden has either tulips, daffodils, or both.

- **15 gardens** have tulips (some of them may also have daffodils)
- **5 gardens** have both tulips and daffodils.

How many gardens have **daffodils** but **no tulips**?

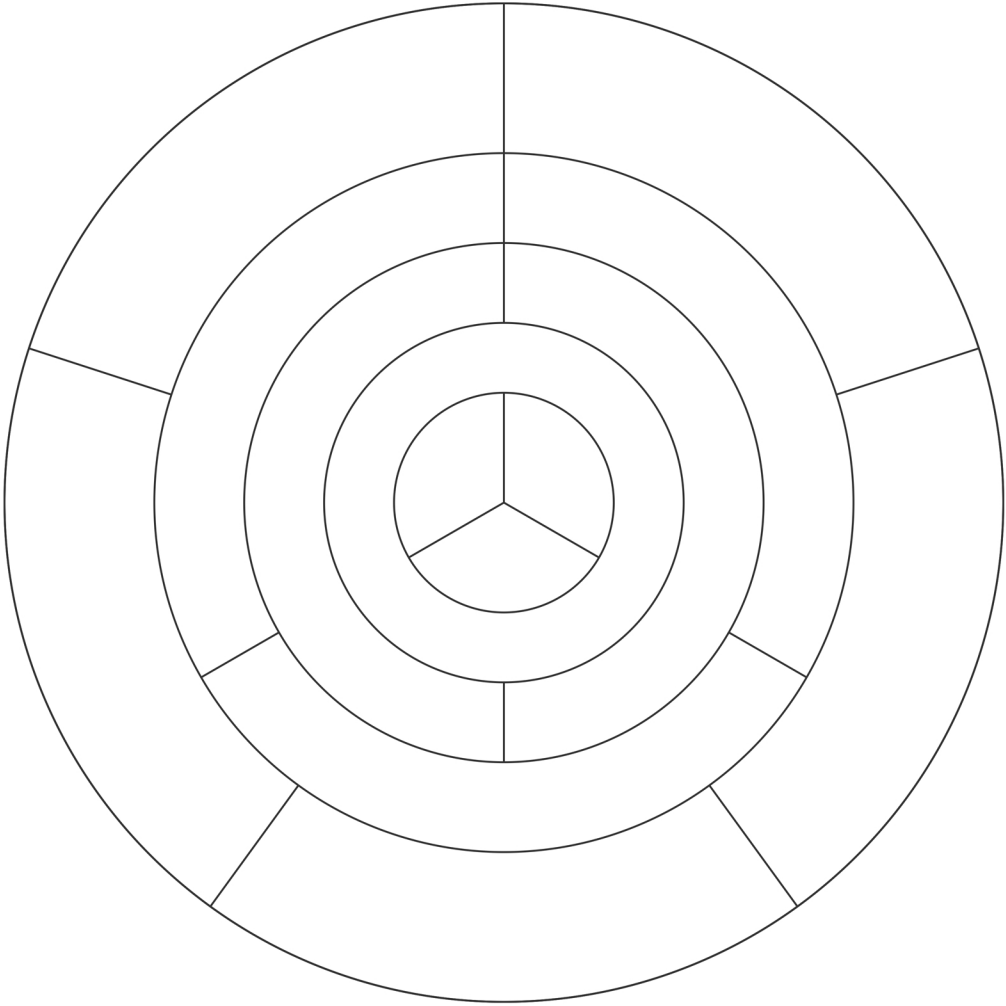
Try solving this yourself, but ask for a visual hint, if needed!

Answer:

14

How many colours do you need to colour this map? If 2 zones share a border, they should have a different colour.

Hint: Do you need to colour the whole map to answer the question?



Answer:

15

Place brackets to make it correct:

$$4 + 3 \times 2 + 1 = 21$$

16

A Y5 student created a table showing how many books they read.
Fill the gaps in this table.

Books read during winter:

	December	January	February	TOTAL
Fiction		2	5	
Non-fiction	3			
TOTAL	10	8		26

17

Sam is doing a multi-day challenge. He does **8 pull-ups every day**.

So far, Sam has completed **158 pull-ups in total**.

If Sam started the challenge on a **Tuesday**, what day of the week is it now?

Answer:

18

There are **20 children** at a summer party.

- There are **8 boys** in the group.
- **12 children** in total like eating ice cream.
- **3 girls** do **not** like eating ice cream.

How many boys at the party like ice cream?

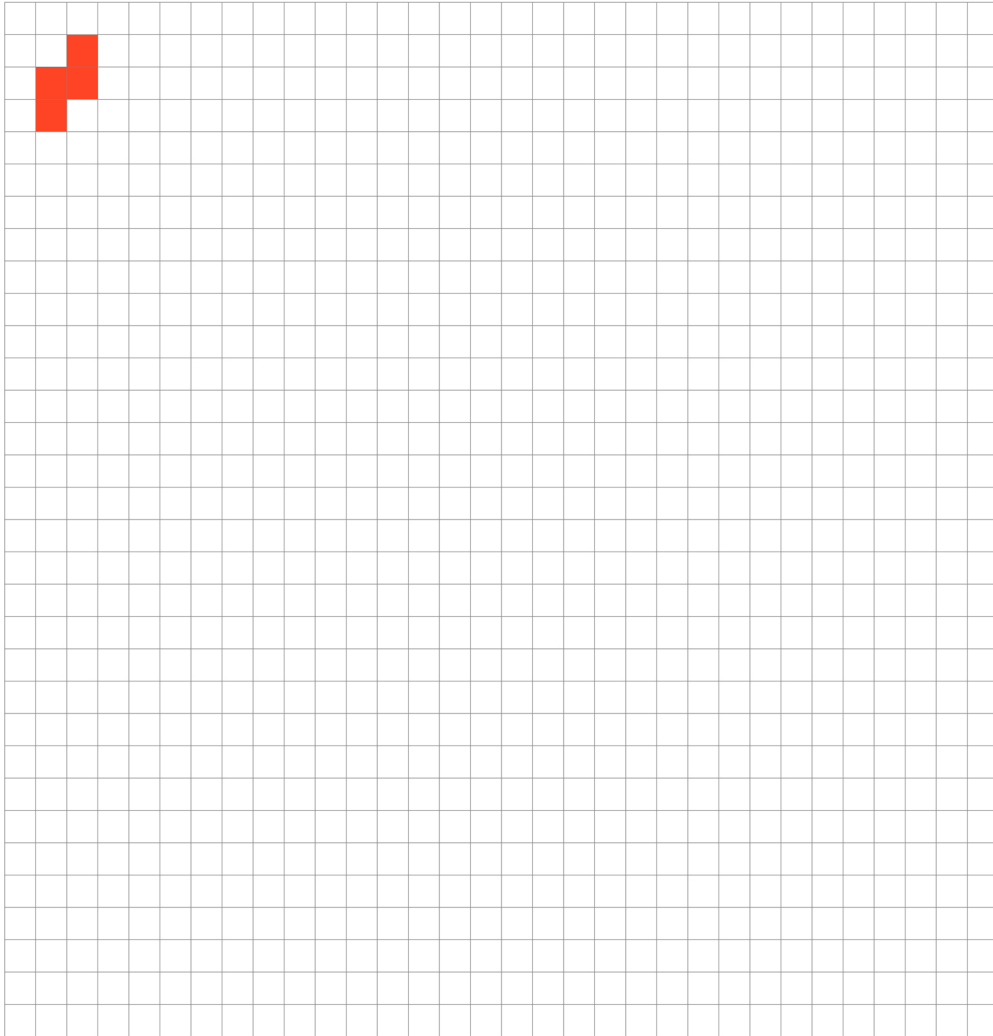
Try solving this yourself, but ask for a visual hint, if needed!

Answer:

19

How many 4-square Tetris pieces are there?
Rotations count as the same, but mirror images count as different.

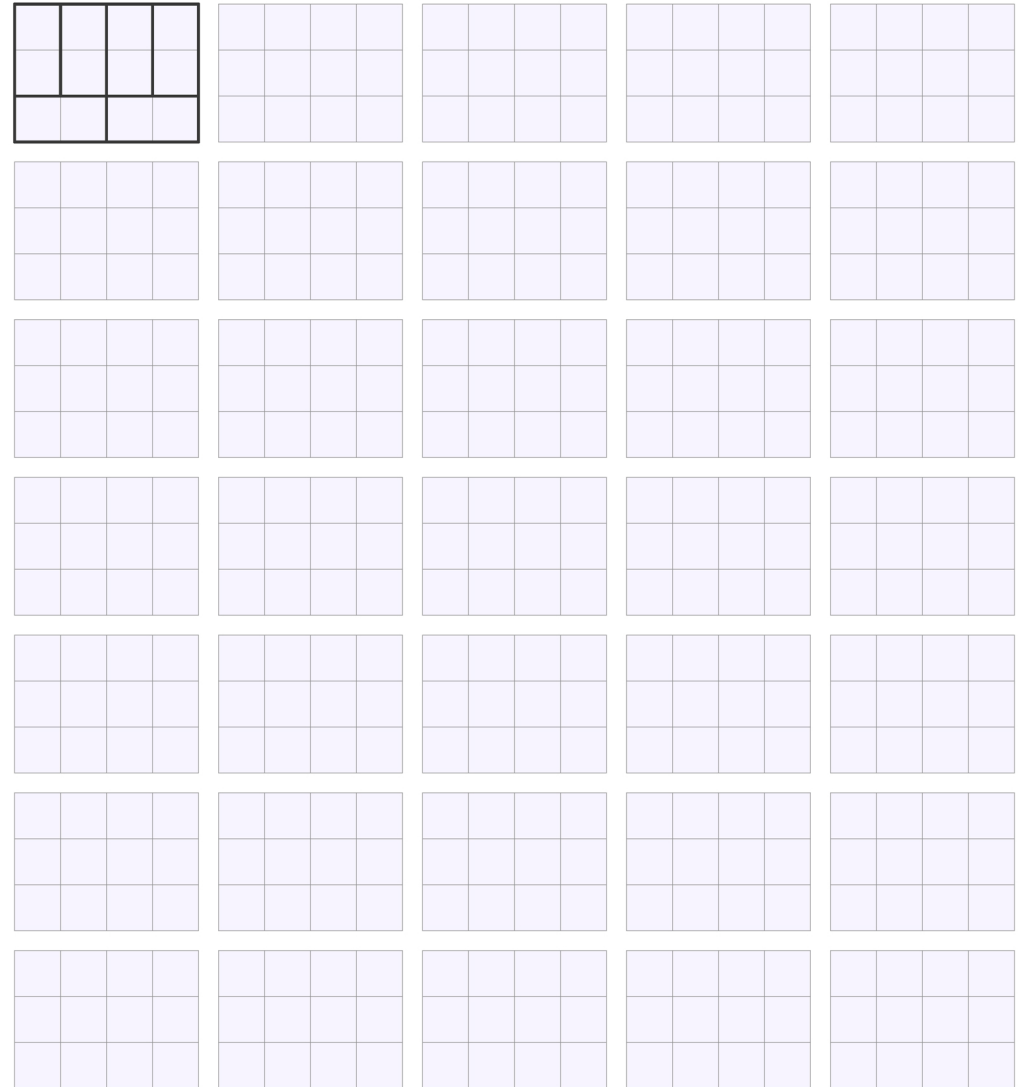
Note: A Tetris piece, or **tetromino**, is a shape made from
4 squares connected by edges.



Answer:

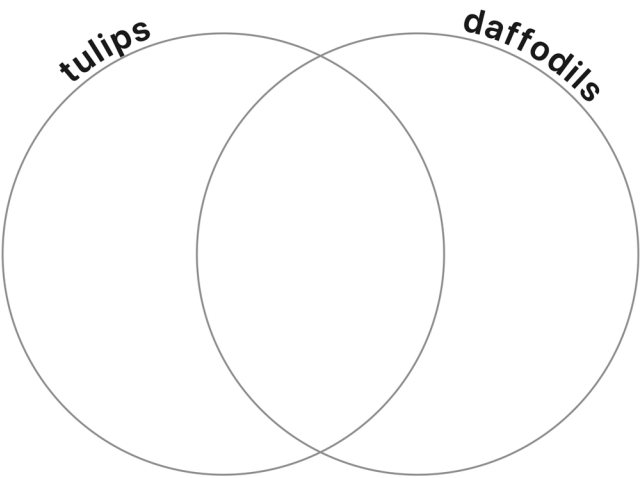
20

How many different domino tilings of a 3x4 rectangle are there? Count two tilings as the same if one can be matched by a mirror flip or by a half-turn.



Answer:

Hint for 13



Hint for 18

	Boys	Girls	TOTAL
Like ice-cream			
Do not like			
TOTAL			

Answers:

1. 4, 4
2. 0, 6
3. —
4. 2, 3
5. 3
6. 13
7. $3 \times 4 = 12$
8. $3! = 6$
9. $21 \times 10 = 210$
10. Friday
11. 4
12. 3
13. 15
14. 4 (max 4 on a plane + show
4 touching each other)
15. $(4+3) \times (2+1) = 21$
16. 7, 2, 5, 14
3, 6, 3, 12
10, 8, 8, 26
17. Sunday
18. 3
19. 7
20. 5