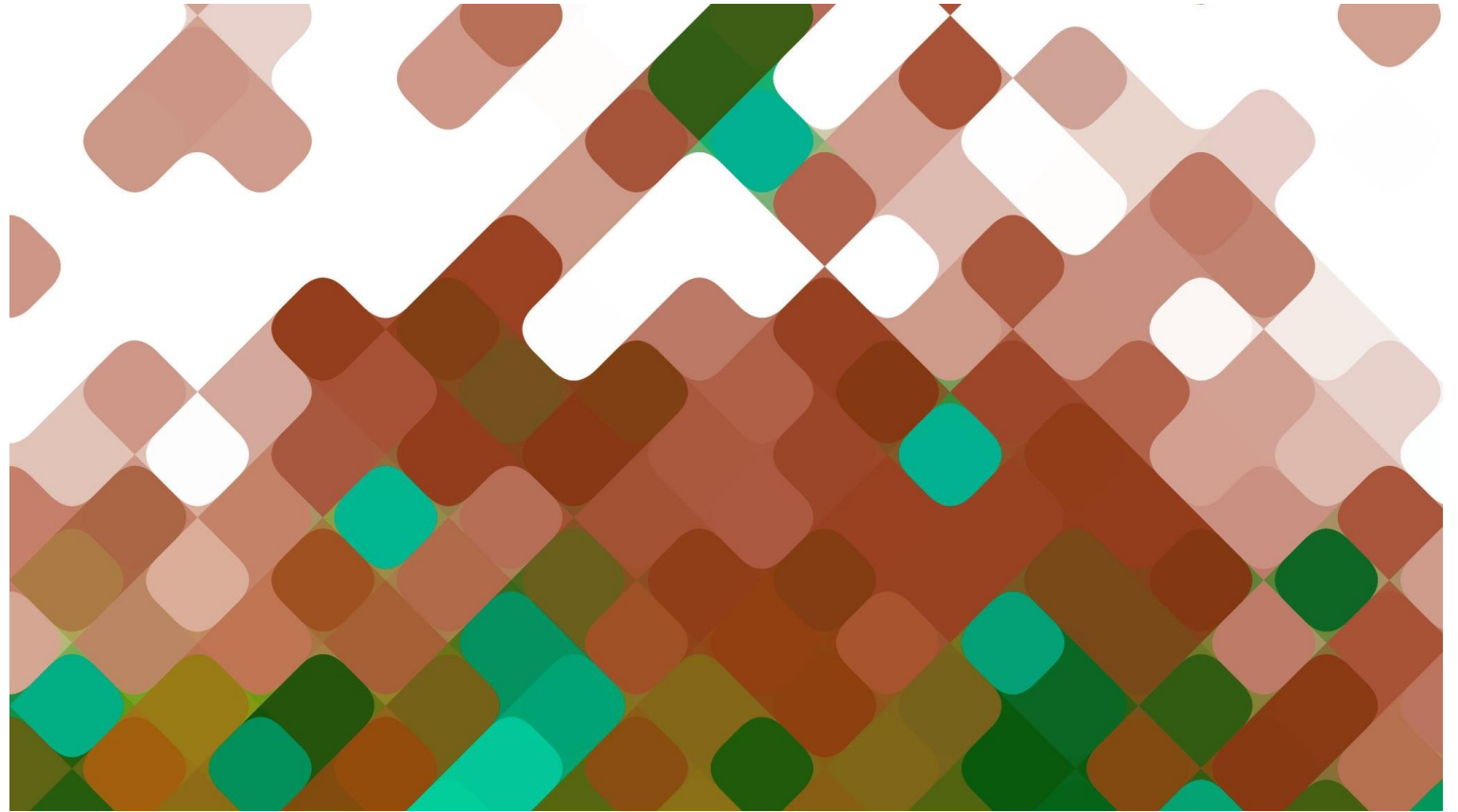


Required Assignment, Week 4, SAGE Math

Week of 5/11- 5/15

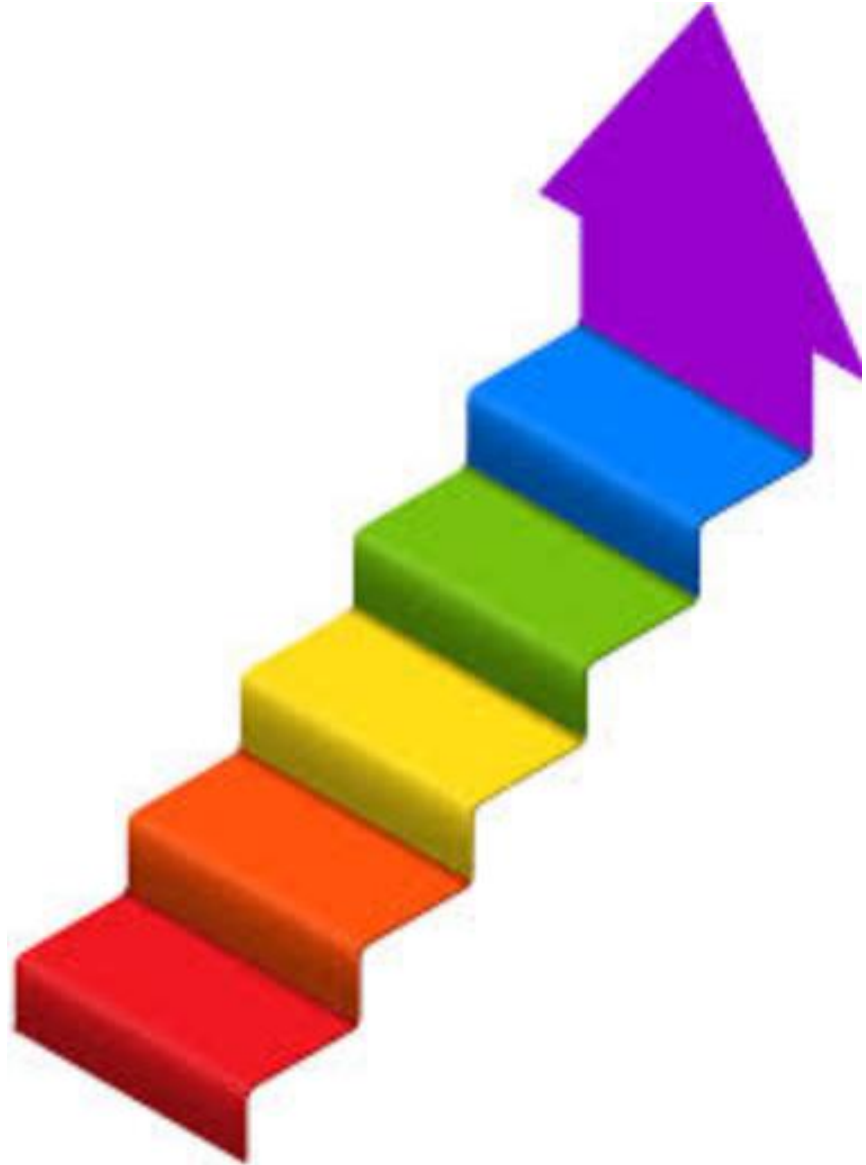


Warm Up

- How many ways can you solve the problem 18×15 ? Remember to explain your thinking!

Growing Staircases

The problems get harder each level you solve. Try and solve as many levels as you can!





Level 1:

This is a staircase that goes up three steps.

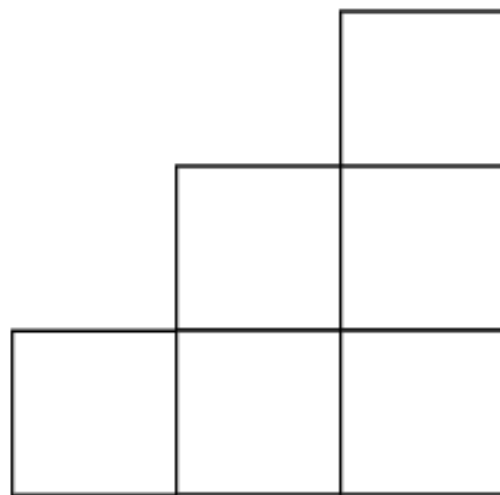
How many blocks are needed for the first step?

How many blocks are needed for the second step?

How many blocks are needed for the third step?

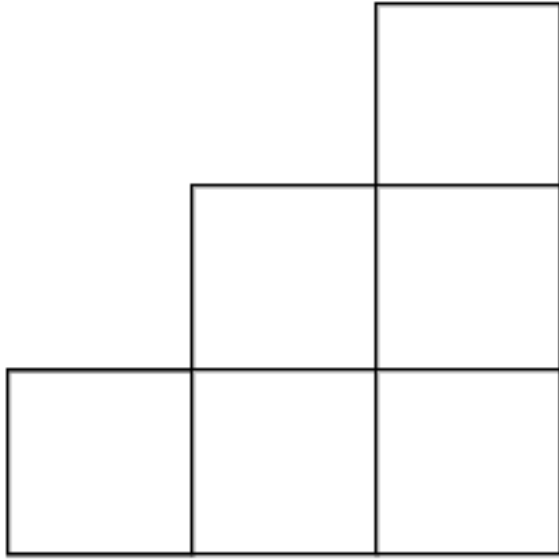
How many blocks in all are needed to make this staircase of three steps?

Explain how you know.



Level 2





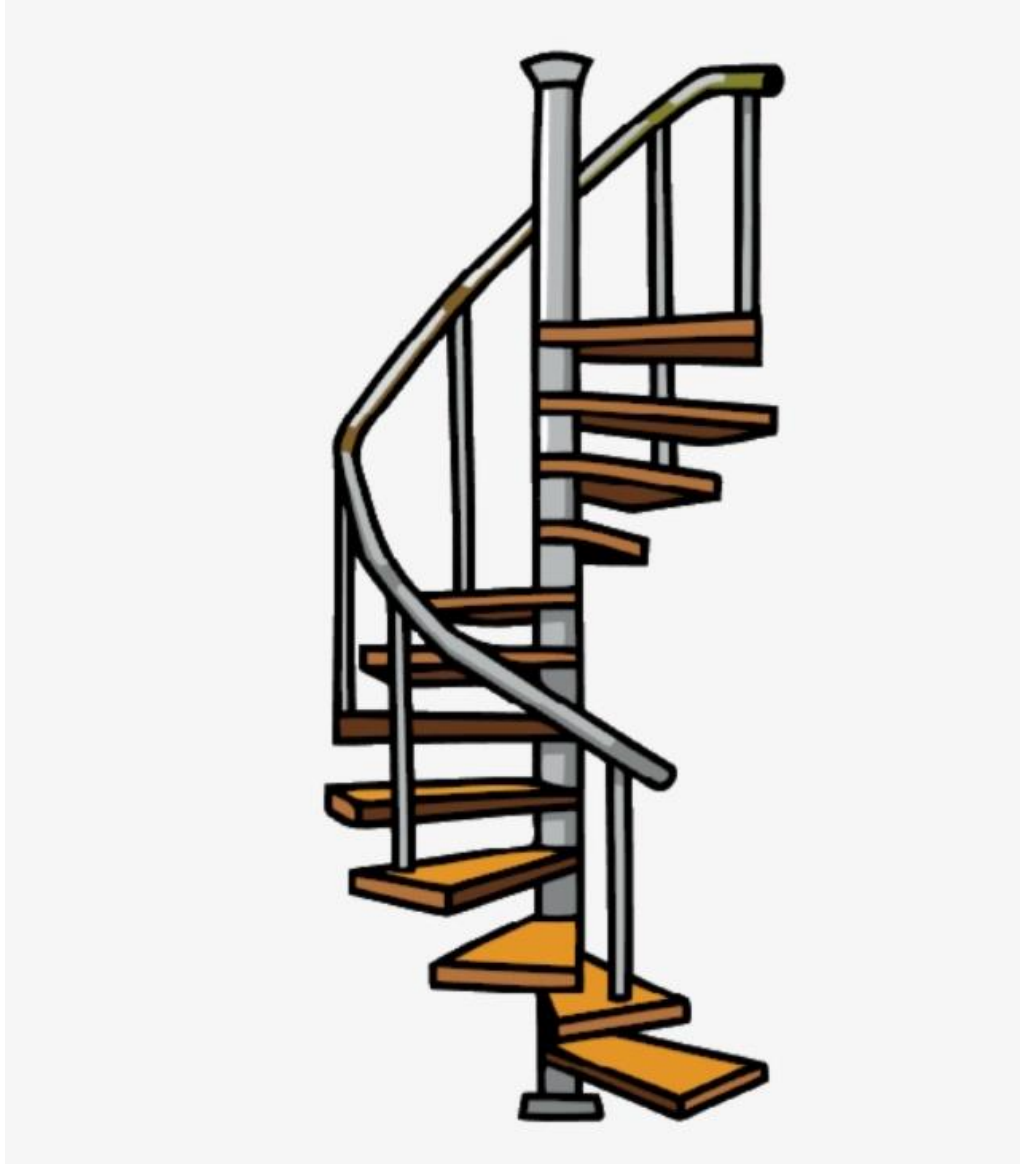
Draw the blocks in the diagram to make the fourth step.

How many blocks in all are needed to make a staircase with five steps?

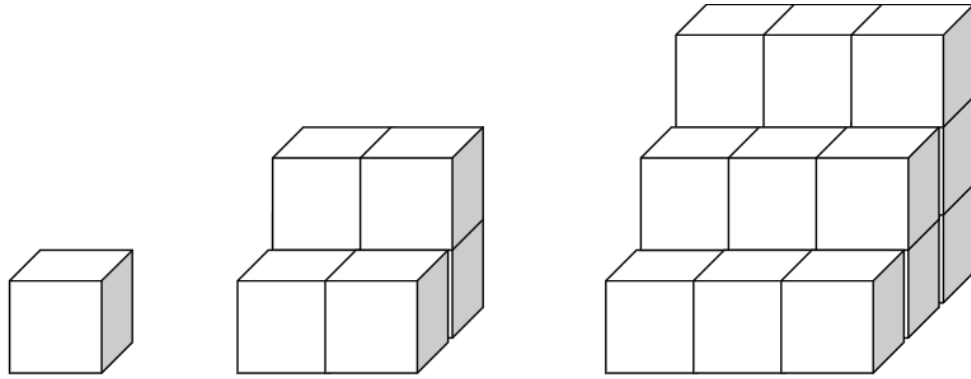
A staircase has 105 blocks. How many stairs does it have?

Explain your answers.





Level 3



This set of staircases grows at a different rate.

How many blocks in all are needed to make a staircase with five steps?

How many blocks make up the top step of a staircase with n steps?

How many blocks make up the first level (the base) of a staircase with n steps?

Given a staircase with 30 steps, explain a process you might follow to determine the number of blocks necessary to build the staircase.

Explain your answers.

