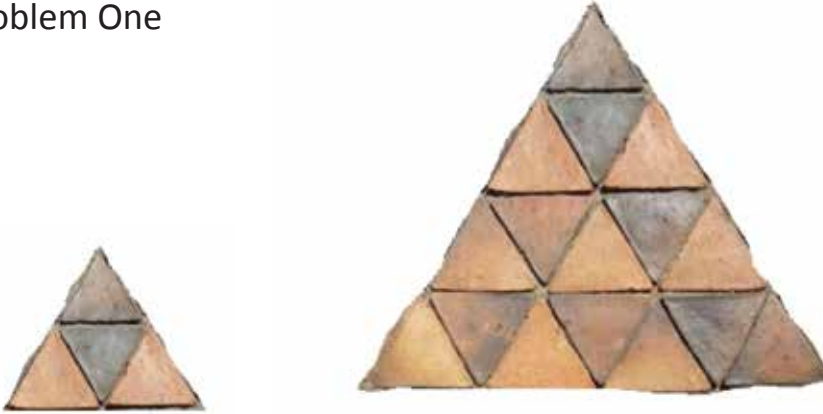


The Truth about Triangles and Squares: Problem set 1

Problem One

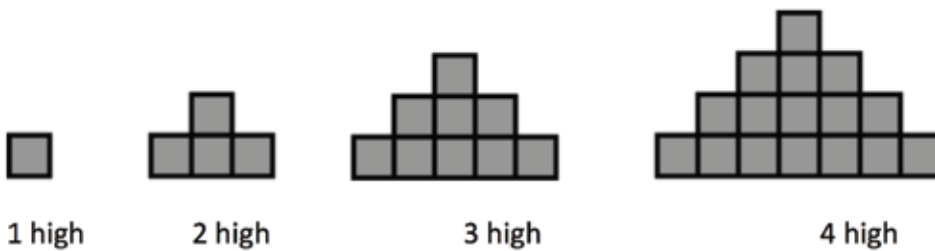


The small triangle is made of four small triangular flooring tiles.

- How many small tiles make up the triangle on the right?
- Suppose the length of a triangular tile equals one.

If a big triangle was made using 400 tiles, how long would the sides be?

Problem Two

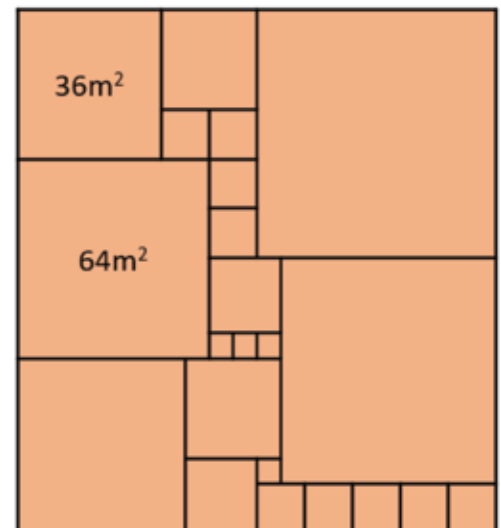


How many small squares would be needed to make a staircase like this that is 15 layers high?

Problem Three

This garden is made up of square-shaped plots. The areas of two plots are given.

Use this information to work out the areas of the other square plots.



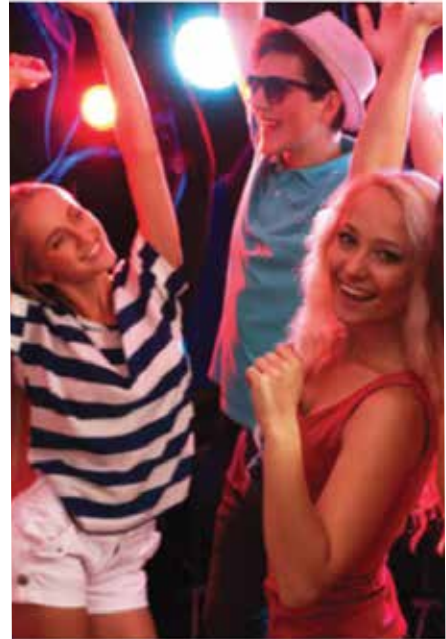
Problem Four

At the “Dance till You Drop” Disco contestants win money by dancing non-stop for hours on end. The prize money is given out like this:

\$1.00 for the first hour \$3.00 for the next hour
 \$5.00 for the next hour after that
 \$7.00 for the next hour after that

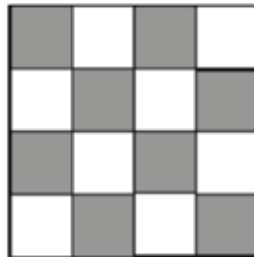
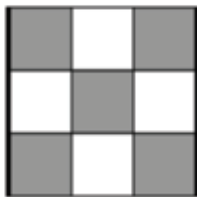
...and so on with an extra \$2.00 added each hour until they drop!

If someone managed to dance for a whole day, 24 hours non-stop, how much prize money would they get?



Problem Five

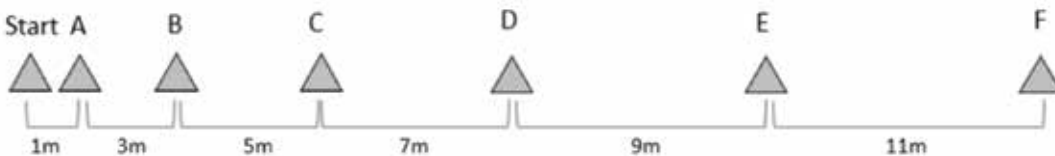
How many different squares of any size can you find on these checkerboards?



How many squares of any size would be on an 8 × 8 checkerboard?

Problem Six

Soccer coach has a new dribbling practice. She set out the cones like this:



You must dribble around a cone, then back to the start, around another cone, then back to the start, until each cone has been rounded. You can go around the cones in any order.

How far, in metres, do you dribble, in the whole exercise?

