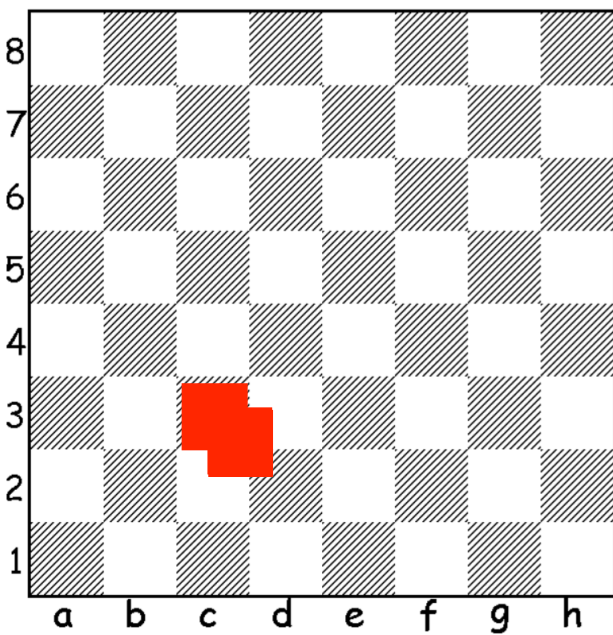


Fun and Games on a Chess Board

I Names of squares on the chess board

Color the following squares on the chessboard below:

c3, c4, c5, c6, d5, e4, f3, f4, f5, f6



What letter do these squares form together?

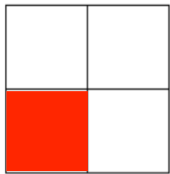
II How many squares are there on a chessboard?

A chessboard itself is a square with side 8.

1. The number of 1×1 squares on the chess board is .

2. What about bigger squares?

Let's first count squares of size 2×2 :



Idea: Instead of counting 2×2 squares, we will count the small 1×1 squares which can serve as the left lower corners of the 2×2 squares that fit on the chessboard.

First, shade the left lower corner of the 2×2 square above.

For each of the squares below, decide if it can be a left lower corner of a 2×2 square:

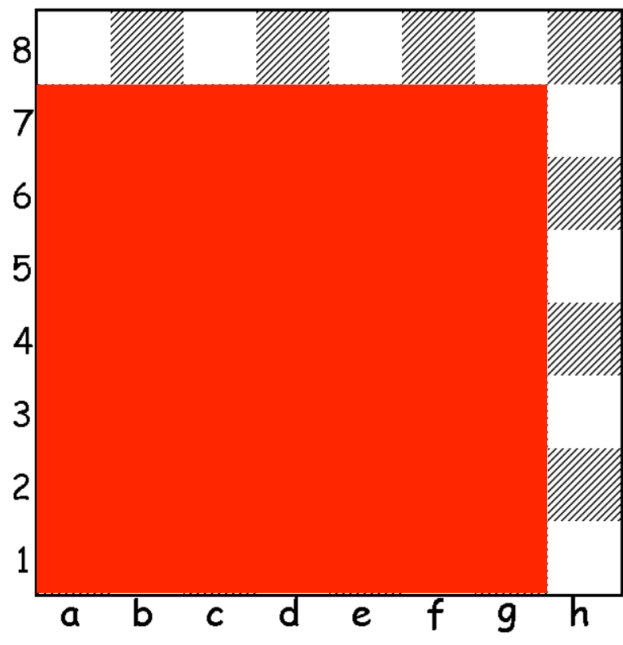
(a) square c3 Yes No

(b) square g6 Yes No

(c) square f8 Yes No

(d) square h2 Yes No

Now color *all* 1×1 squares that can serve as the left lower corners of a 2×2 square:



How many 2×2 squares can you fit onto a chessboard?

$7 \times 7 = 49$

3. For each of the squares below, decide if it can be a left lower corner of a 3×3 square:

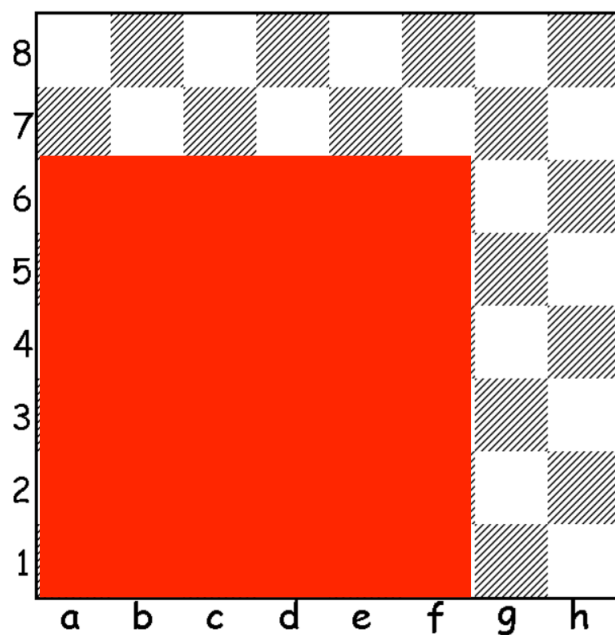
(a) square e6 Yes No

(b) square g3 Yes No

(c) square a7 Yes No

(d) square f6 Yes No



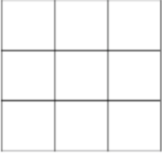
Now color *all* 1×1 squares that can serve as the left lower corners of a 3×3 square:



How many 3×3 squares can you fit onto a chessboard?

$6 \times 6 = 36$

Now you can fill out the table below:

Type of Square	Number of such squares
	64
	49
	36