

Problem of the week!

In King Arthur's jousting tournament, each of the several competing knights receives 17 points for every bout he enters. The winner of each bout receives an extra 3 points. At the end of the tournament, the Black Knight has exactly one more point than the Red Knight.

What is the smallest number of bouts that the Black Knight could have entered?



Problem of the week!

In 2014, Australian Suzy Walsham won the annual women's race up the 1576 steps of the Empire State Building in New York for a record fifth time.

Her winning time was 11 minutes 57 seconds.

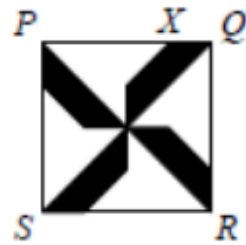
Approximately how many steps did she climb per minute?



The solution will be posted online next Friday

Problem of the week!

Four congruent isosceles trapeziums are placed so that their longer parallel sides form the diagonals of a square $PQRS$, as shown. The point X divides PQ in the ratio 3:1. What fraction of the square is shaded?



- A $\frac{5}{16}$ B $\frac{3}{8}$ C $\frac{7}{16}$ D $\frac{5}{12}$ E $\frac{1}{2}$



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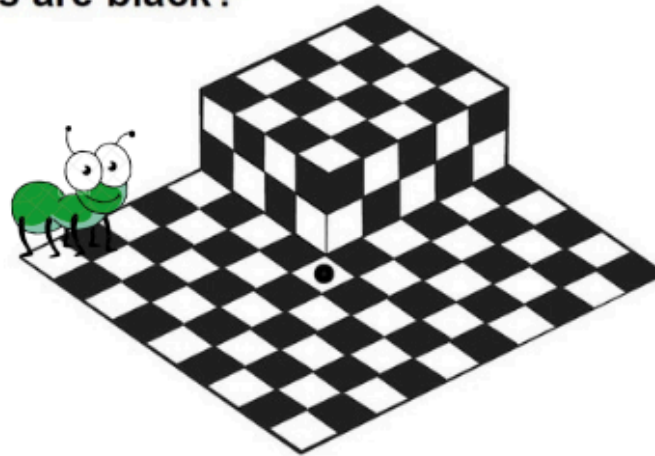


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Problem of the week!

An ant is on the square marked with a black dot.
The ant moves across an edge from one square to
an adjacent square four times and then stops.

**How many of the possible finishing
squares are black?**



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Problem of the week!

All the positive integers are written in the cells of a square grid. Starting from 1, the numbers spiral anticlockwise. The first part of the spiral is shown in the diagram.

Which number is immediately below 2012?

A 1837 **B** 2011 **C** 2013 **D** 2195 **E** 2210

					...	32	31	
		17	16	15	14	13	30	
		18	5	4	3	12	29	
		19	6	1	2	11	28	
		20	7	8	9	10	27	
		21	22	23	24	25	26	



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Problem of the week!

Ben has exactly the right number of cubes, each of side 5 cm, to make a solid cube of side 1 m. He places the smaller cubes side by side to form a single row. How long is this row?



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Problem of the week!

A 3-digit integer is called a 'V-number' if
the digits go 'high-low-high'
– that is, if the tens digit is smaller than
both the hundreds digit and the
units (or 'ones') digit.

How many 3-digit 'V-numbers' are there?



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