

PYTHAGORAS QUEST

Regional Final



Handelskammaren
I sydsvenska företags intresse

Part 2. Time : 30 min – 7 Questions

Max points: 14 (2p/question).

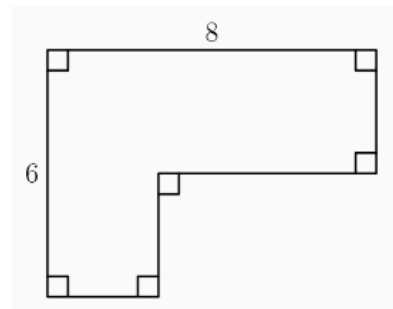
Allowed tools: Paper, pencil and rubber (no calculator)

Write your team name on each sheet.

Only your answer is needed for this part.

1. Perimeter

Calculate the perimeter of the shape to the right.



2. Coins

Claudia has 12 coins, each of which is a 5-cent coin or a 10-cent coin. There are exactly 17 different values that can be obtained as combinations of one or more of her coins. How many 10-cent coins does Claudia have?

3. ADDition

A, B, C and D stand for different single digits in the addition to the right. What are all the possible values for D?

$$\begin{array}{r}
 A B B C B \\
 + B C A D A \\
 \hline
 D B D D D
 \end{array}$$

4. Goal!

Matches between Skillinge IF and Kiviks AIK are normally funny affairs. Skillinge have reported that during the last ten matches they have put away 1,2,3,4,5,6,7,8,9 and 10 goals respectively against Kivik. No match was a draw. On the five matches Skillinge lost, they lost by only one goal. In each of the other games, Skillinge scored twice as many goals as Kivik. How many goals did Kivik score in total?

5. Cool Cube

A 3x3x3 cube is made of 27 normal dice. Each die's opposite sides sum to 7. What is the smallest possible sum of all of the values visible on the 6 faces of the large cube?

6. Fractious

If $\frac{30}{7} = x + \frac{1}{y + \frac{1}{z}}$ what is $x + y + z$?

7. ABC

Let $a + 1 = b + 2 = c + 3 = d + 4 = a + b + c + d + 5$.

What is $a + b + c + d$?