

Mathématiques sans Frontières Junior CM2/6°

- Epreuves finales 2018 -



Riddle 1 : Ein stolzes Alter !

«Mama, weißt du, dass wir heute zusammen 50 Jahre alt werden ?
- Ja, Charlotte. Und in 15 Jahren werden dein Bruder, du und ich zusammen sogar 100 Jahre alt.»

Wie alt ist Charlottes Bruder heute ?

السؤال 1: لَيْسَ عُمرُكَ .

أُمِّي، قُولِي، هَلْ تَعْلَمِينَ بِأَنَّا فِي هَذَا الْيَوْمِ، نَحْنُ الْإِثْنَيْنِ عِنْدَنَا 50 سَنَةً؟
- نَعَمْ سَارْلُوطُ. وَبَعْدَ 15 سَنَةً، أَخُوكِ، أَنْتِ وَأَنَا سَيَكُونُ عِنْدَنَا نَحْنُ الثَّلَاثَةُ 100 سَنَةً.
مَا هُوَ عُمرُ أَخِ سَارْلُوطُ فِي هَذَا الْيَوْمِ؟ عَلِّلي إجَابَتَكَ .

Riddle 1 : C'est pas de ton âge

« Dis, Maman, tu sais qu'aujourd'hui nous avons 50 ans à nous deux ?
- Oui Charlotte. Et dans 15 ans, ton frère, toi et moi aurons 100 ans à nous trois. »

Quel est l'âge du frère de Charlotte aujourd'hui.



Riddle 2 : Enjoy your meal

Olivier, Bélinda, Daniela and Sébastien are in a restaurant.

The bill is 48 €. They will share the cost equally among the four of them but because they are celebrating Bélinda's birthday and Daniela leaving to go to Madagascar:

- Bélinda, Olivier and Sébastien will share the cost of Daniela's meal;
- Daniela, Olivier and Sébastien will share the cost of Bélinda's meal.

How much will each person pay? Justify your answer.



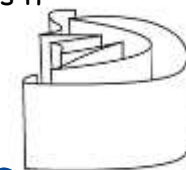
Riddle 3 : Roll paper

Zoé has fun folding and bending a strip of paper. Then she puts it up on its edge.

The strip of paper is red on one side and blue on the other.

Colour in the diagram which shows how Zoé folded the strip of paper.

See annexes



See annexes

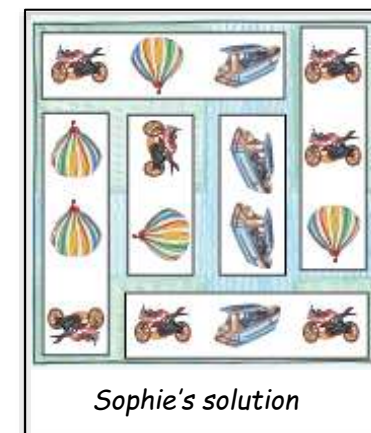
Riddle 4 : Land-sea

Sophie is playing a game where you put the pieces down on the board.

Here are the rules of the game:

- motorbikes have to be placed on the ground (green)
- boats have to be placed on the water (blue)
- the hot-air balloons can be over the ground or the water
- the pieces cannot be cut up or placed on top of one another.

Sophie has placed the pieces as shown to get a correct solution.



Stick the pieces given in the annexe onto the board to show another correct solution.

Riddle 5 : Farmer

Mylène wants to make a rectangular enclosure for her sheep. She has 18 posts available to hold up the fence. There has to be one metre between two fence posts. Several different enclosures are possible.



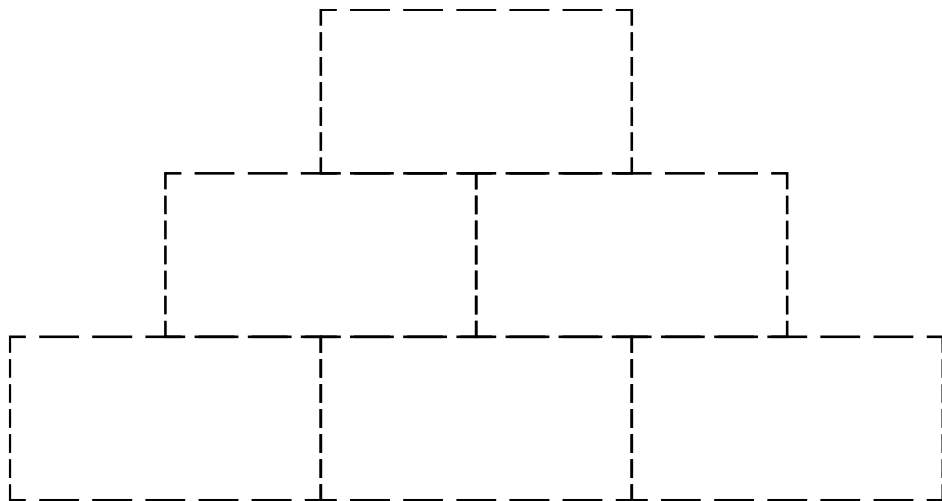
What are the length and breadth of the rectangular enclosure which makes the most grass available for the sheep to graze. Justify your answer.

Riddle 6 : Build up

Anatole places all the cards of his game (see the annexe) so that:

- the card numbers on a level are always smaller than those on the level above;
- 2 cards of the same colour cannot touch each other.

See annexes



Stick a possible solution for Anatole onto the diagram

Riddle 7 : Team spirit

The basketball team for MsF Junior is made up of several players. Here are their positions::

- Anthony is point guard ;
- Stéphane, Laurence and Céline are wings ;
- Olivier, Fatima and Mickaël are forwards.

At the start of the match the coach needs to choose one point guard, two wingers and two forwards. The others start as substitutes.

Write down all the possible teams that the coach can pick to start off the match.



Riddle 8 : Poupou pidou

Marilyn is in love with John. She tells him that her heart is beating for him 1,000,000 times a day. John thinks that cannot be true and that she is exaggerating.

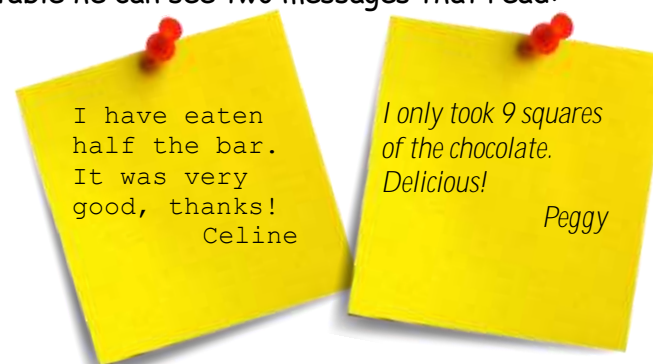


Make a realistic estimate of the number of Marilyn's heartbeats in a day. Explain how you got your answer.

Epreuve 9 : Yummy

Alex buys a bar of chocolate and forgetfully leaves it lying on a table in the teachers' staffroom. When he comes back he sees that there is only one eighth of the bar left.

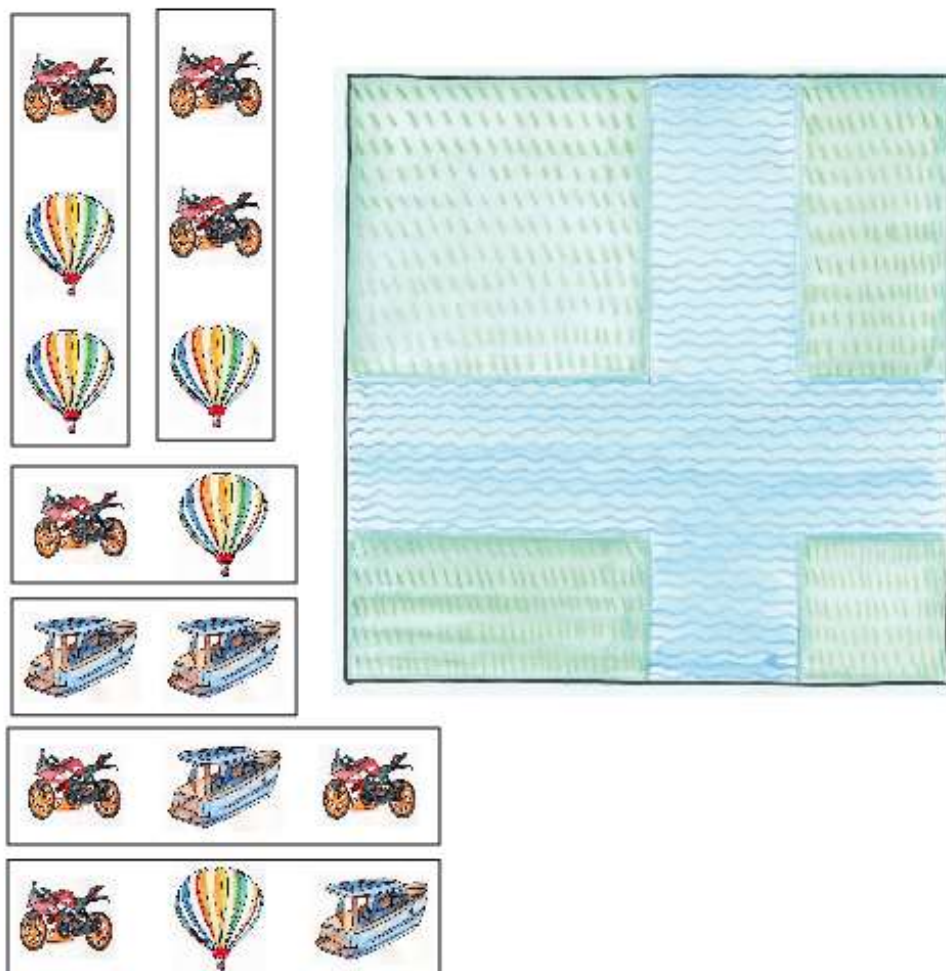
On the table he can see two messages that read:



How many squares of chocolate are in a whole bar?

Annexes :

For riddle 4 :



For riddle 6 :



For riddle 3 :

