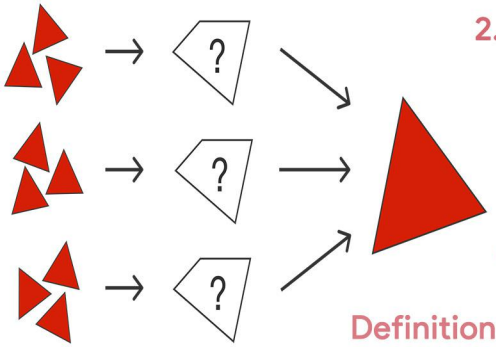
ISTE TRICK TIMES

1. What can you see once in minute, twice in a movement and never in a thousand years ?



2. I am a peculiar quadrilateral. If you put 3 copies of me together, I can form an equilateral triangle. Similarly, if you put 3 copies of an equilateral triangle together, then they can form me!

What quadrilateral am I?

Definitions: parallelogram, trapezoid, rhombus

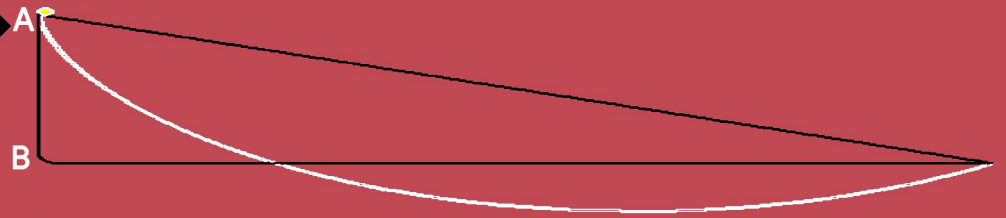
3. Arrange the following cards in a way that makes all of the following true:

(I). The king is in one of the two middle spaces.
(II). The queen is left of the jack, and right of the ace.
(III). The ace is directly next to the queen.

Which card is in the right-most position?

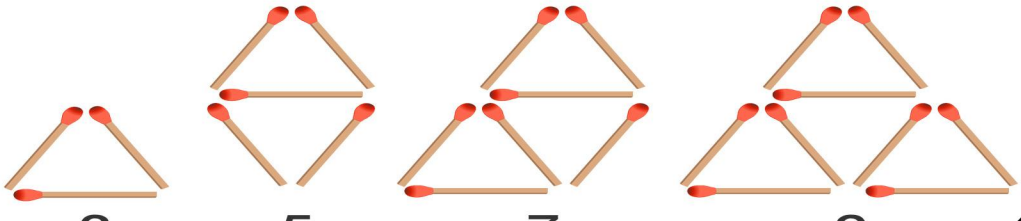
BRACHISTOCHRONE

A brachistochrone curve or curve of fastest descent, is the one lying on the plane between a point A and a lower point B, where B is not directly below A, on which a bead slides frictionlessly under the influence of a uniform gravitational field to a given end point in the shortest time. The problem was posed by Johann Bernoulli in 1696.



The curve of fastest descent is not a straight or polygonal line (blue) but a cycloid (red).

PUZZLING



4. From the above diagram, we see that in order to create 1, 2, 3 and 4 congruent unit equilateral triangles on a flat plane, we need 3, 5, 7 and 9 matchsticks respectively.

What is the minimum number of matchsticks on a flat plane needed to create 7 congruent unit equilateral triangles? (Be careful! This one is trickier than it initially looks.)

CHALLENGES

1. What does an Island and the letter T have in common ?
2. A small number of cards has been lost from a complete pack. If I deal among four people, three cards remain. If I deal among three people, two remain and if I deal among five people, two cards remain. How many cards are there?
3. Phunsuk wangdu noticed that the amount he was paying for his lunch was a rearrangement of the digits of the amount of money he had in his pocket, and that the money he had left over was yet another rearrangement of the same three digits! How much money did Phunsuk wangdu start with?
4. I have two glasses the same size. One contains 100 ml of lemonade and the other contains 100 ml of ink. I take a spoonful of lemonade and stir it into the ink, and then take a spoonful of that mixture and stir it back into the lemonade. Which glass now contains least of the contents of the other one? (Explain)

Win exciting prizes by sending us the solutions of the challenges.....
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