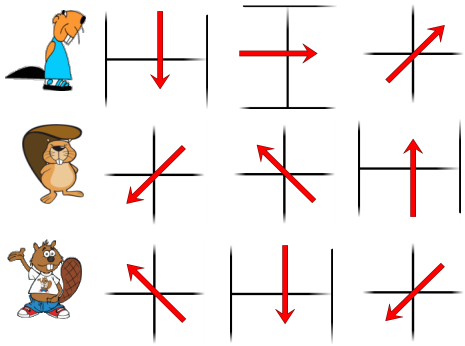
Mushrooms

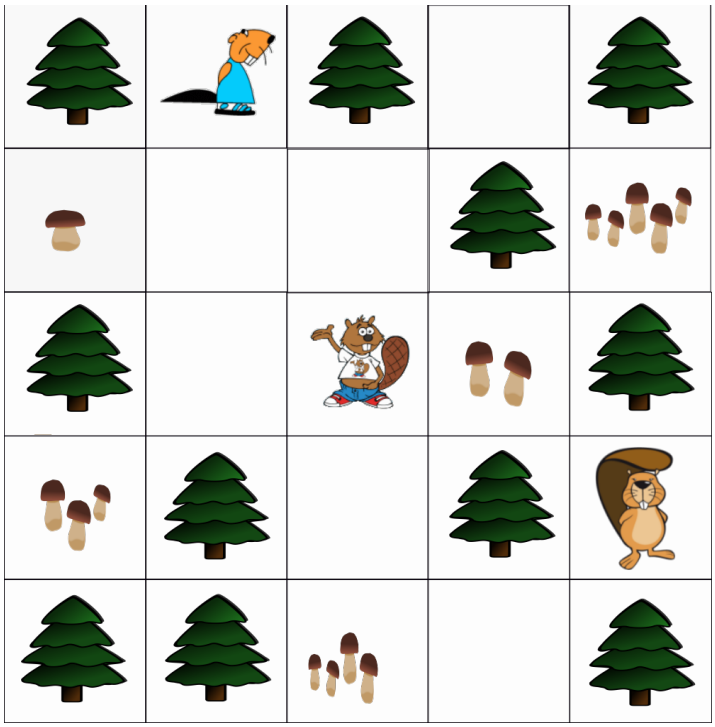
Three beavers are in a forest.

They want mushrooms.

Each beaver moves three squares.

The arrows show directions for each beaver.





QUESTION

Which beaver will find mushrooms?

A.

B.

C.

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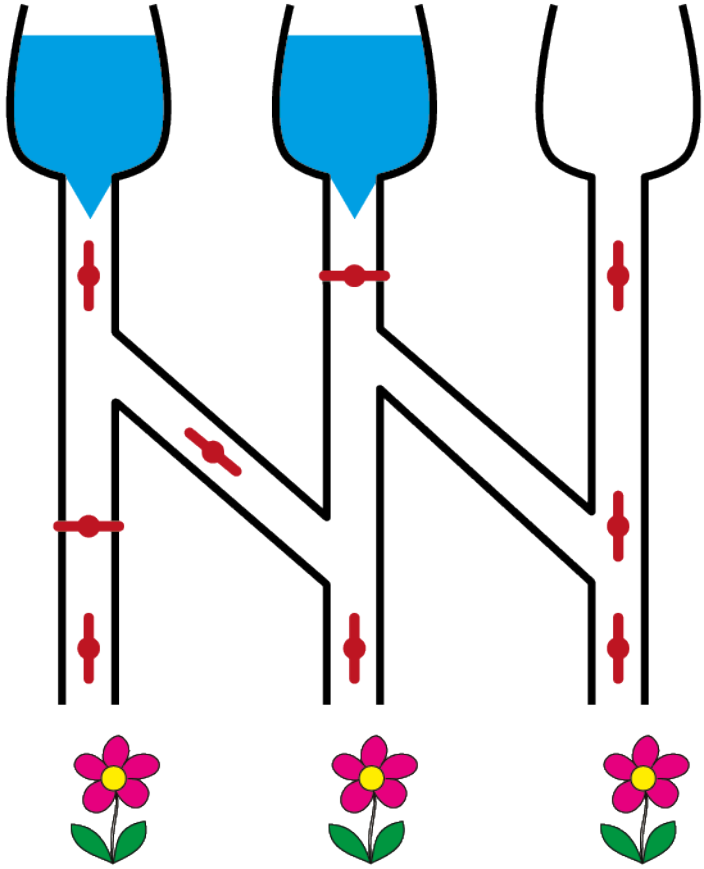
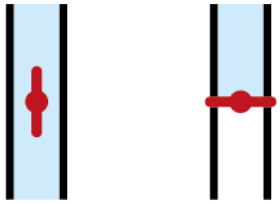
Watering

The picture on the right shows how a watering system is connected. The system consists of tubes and valves. Water only flows through open valves.



Open valve Closed valve



QUESTION

Which flowers will get water?

A.

B.

C.

D.

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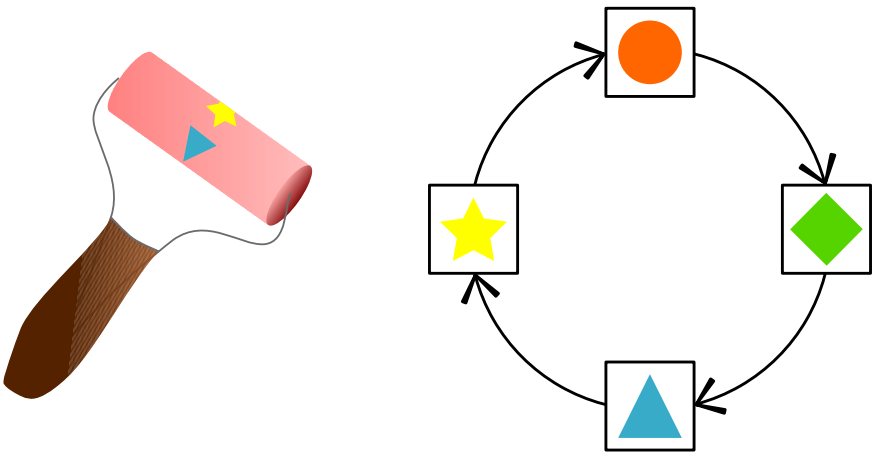
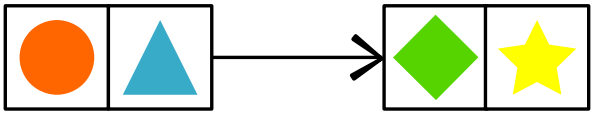
Bebras painting

Ben has a magic roller that works as follows: the roller replaces the current shape with the next shape, as shown by the arrows in the figure.

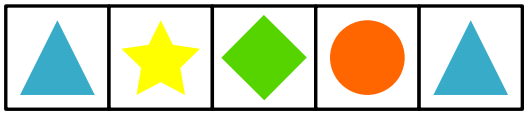


Example: below, when Ben uses the magic roller over the original painting on the left, he gets the painting on the right.

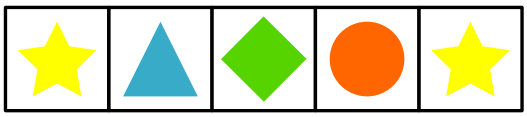


QUESTION

What will this painting look like after using the magic roller?

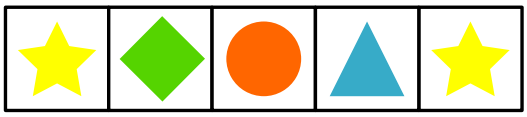


A.

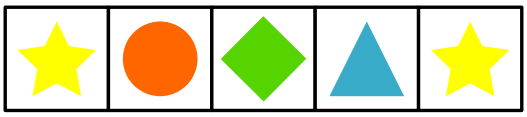


B.

C.



D.



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SMART FUTURES

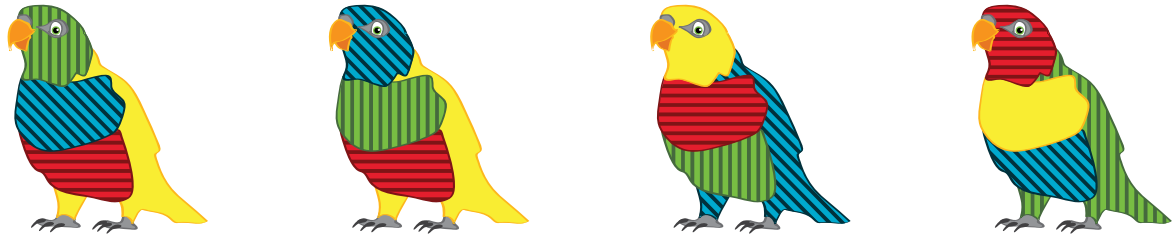
Bird colours

A rainbow parrot has four chicks. Each chick has four colours: red, blue, green, and yellow.

Each colour in a chick is in a different body part compared with the other chicks.

QUESTION

Based on the first three chicks, what does the fourth chick look like?



A. **B.** **C.** **D.**

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SMART FUTURES

Only nine keys

Daniel sends text messages from his old phone. For each letter he has to press a key once, twice, three, or four times, followed by a short pause. In order to type 'C' he has to press the number 2 key three times because 'C' is the third letter written on this key. In order to type 'HIM' he has to press the number 4 key twice, followed by the number 4 key 3 times, followed by the number 6 key once.

Daniel presses exactly six times to enter the name of a friend.

QUESTION

What is the name of his friend?

A. Miriam

B. Iris

C. Emma

D. Ina

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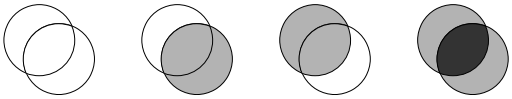
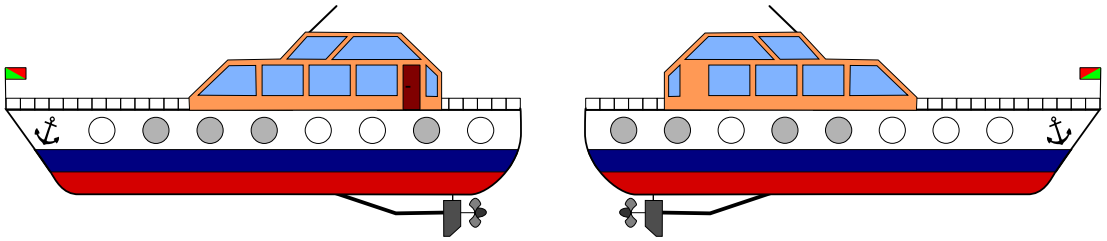
SMART FUTURES

Funny windows

The windows of a boat are either clear or lightly tinted. Standing beside the boat you can look through two opposite windows at once. Depending on the colours of both windows they will appear to have a new colour:



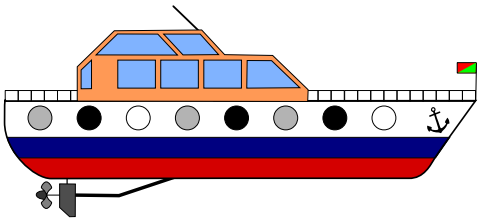
Captain Krysta has given you drawings of her boat showing which windows are clear and which are lightly tinted:



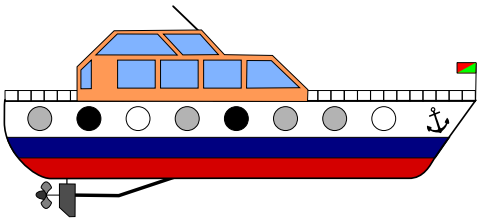
QUESTION

What you would see if you stood beside it and looked through opposite windows?

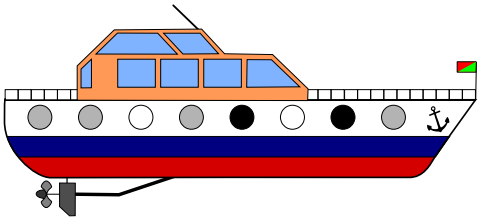
A.



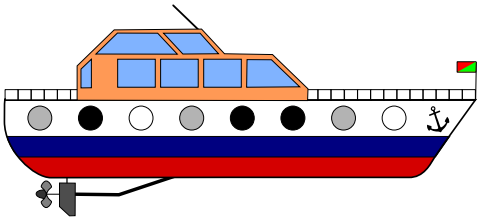
B.



C.



D.



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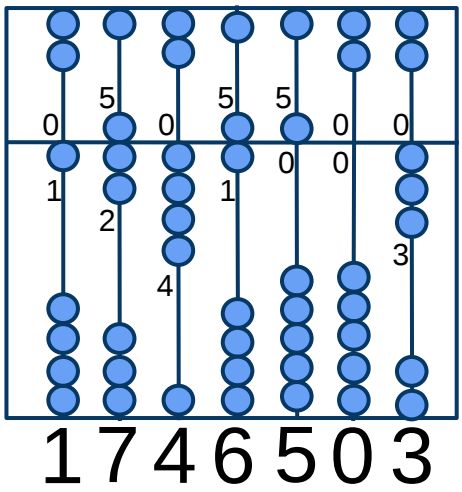
SMART FUTURES

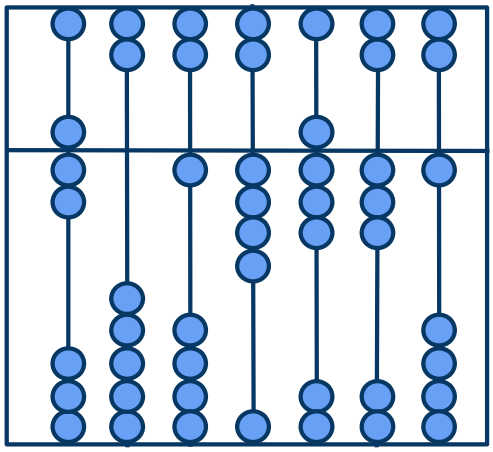
Abacus

A number is represented on a Chinese abacus by the position of its beads. The value of a bead on the top part is 5; the value of a bead on the bottom part is 1. A bead is counted if it is pushed towards the centre of the abacus. To represent the number 1 746 503 these beads are pushed towards the centre as shown in the picture:



QUESTION

What number does the following abacus represent?



A. 7 0 5 0 4 3 1

B. 3 0 1 0 4 3 1

C. 3 0 5 4 8 3 1

D. 7 0 1 4 8 3 1

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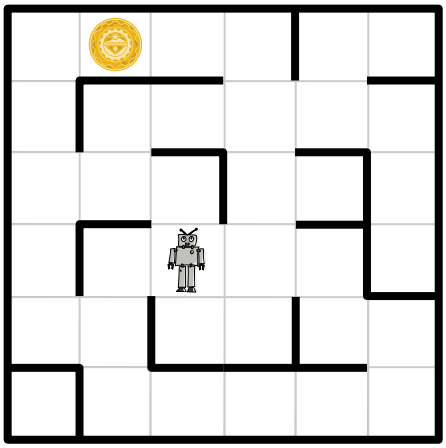
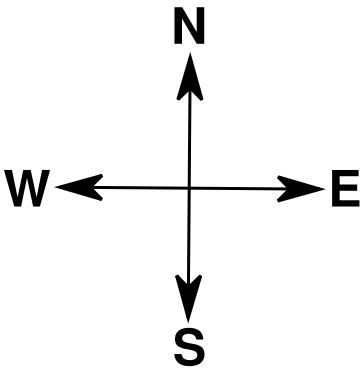
Alien language

Space beavers are on a mission to get a gold coin from an alien maze. The aliens have left a robot that can be programmed to move around the maze. The beavers don't understand the alien language, but they know the aliens use a different command for each of “move one space north”, “move one space south”, “move one space east”, and “move one space west”.





QUESTION

The coin and robot are positioned as shown above. One of the four sequences of commands below is correct. Which one?

A. Ha' poS poS Ha' Ha' nIH

B. Ha' poS poS Ha' nIH Ha'

C. Ha' Ha' poS Ha'

D. Ha' poS nIH vI'ogh Ha' poS

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Mobile phones

A family has three mobile phones but none of the batteries have any charge.

It takes 1 hour to fully charge a mobile phone but this does not need to be done all in one go.

The family only has two mobile phone chargers in the house.

QUESTION

What is the shortest time they need to fully recharge the three phones?

A. Three hours

B. Two hours

C. One and a half hours

D. One hour

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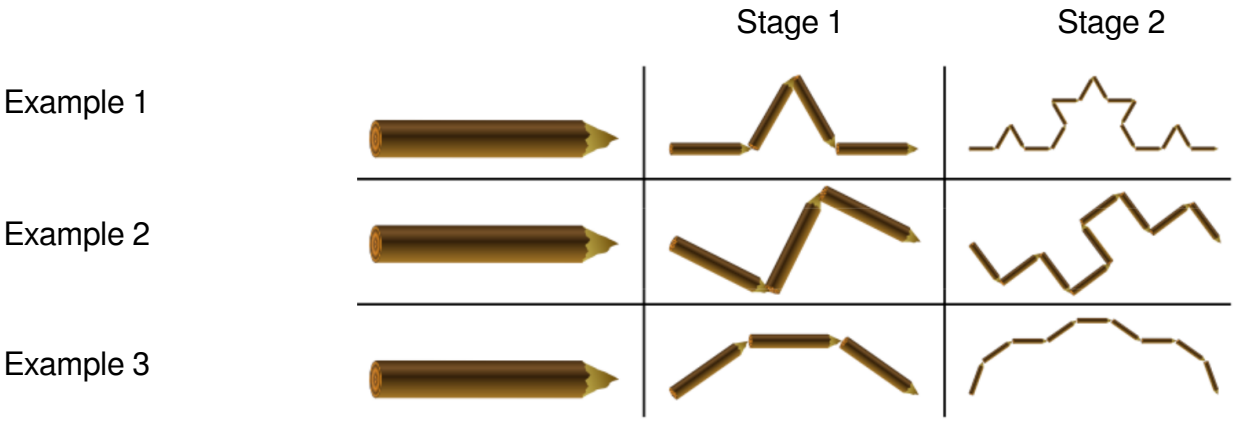
SMART FUTURES

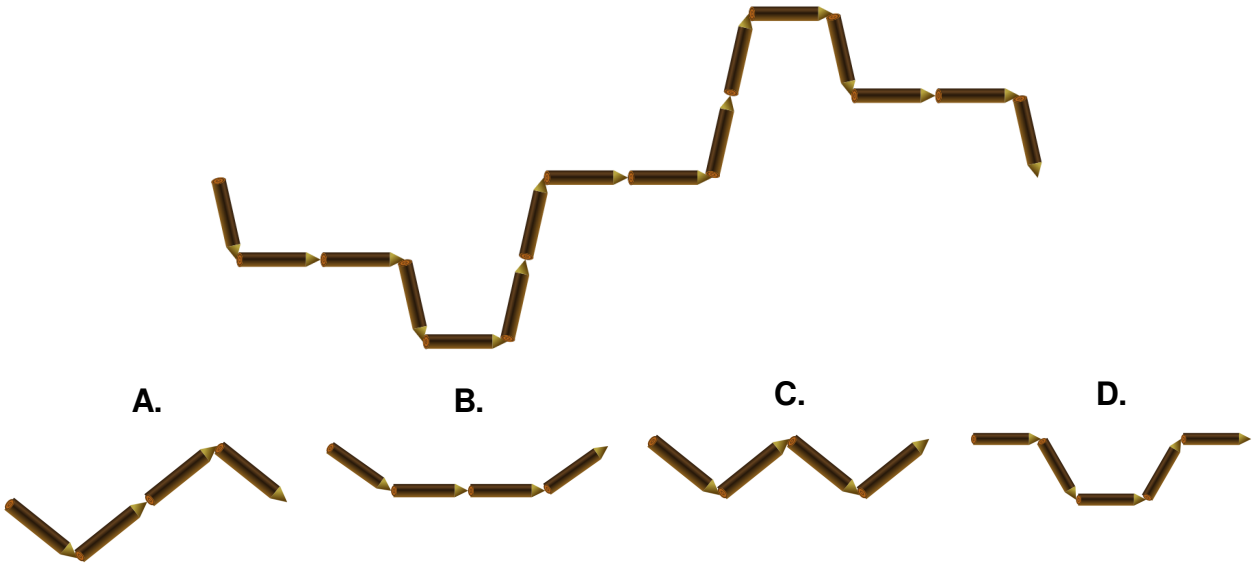
Log art

When beavers gnaw on trees they enjoy placing the pieces in a special way. The beavers start with a single log. In stage one, a big log is gnawed into smaller logs following some pattern. In stage two, each individual log is again gnawed into even smaller logs using the same pattern. Here are three examples. On each line you see how the beaver started, the result after stage one and the result after stage two.



QUESTION

If the result of the second stage looks like this, what was the first stage?



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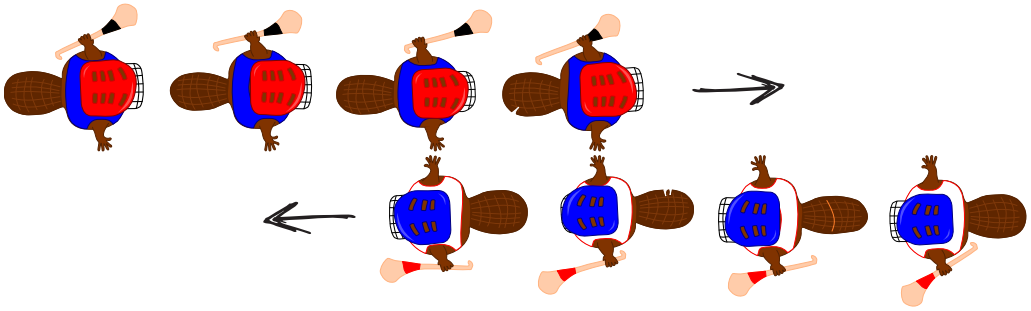
SMART FUTURES

Hurlers shake hands

Beavers enjoy playing hurling. After the game ends, the beavers in each of the two teams line up in a row and walk past the other team. As they pass each other, they shake hands. At the beginning, only the first player on each team shakes hands. Next, the first two players on each team shake hands (see picture below). This continues until each player has shaken hands with every player on the other team. There are 4 players on each team.



QUESTION

If each player takes one second to shake hands and move to the next player, how many seconds of shaking hands will there be?

A. 4

B. 5

C. 6

D. 7

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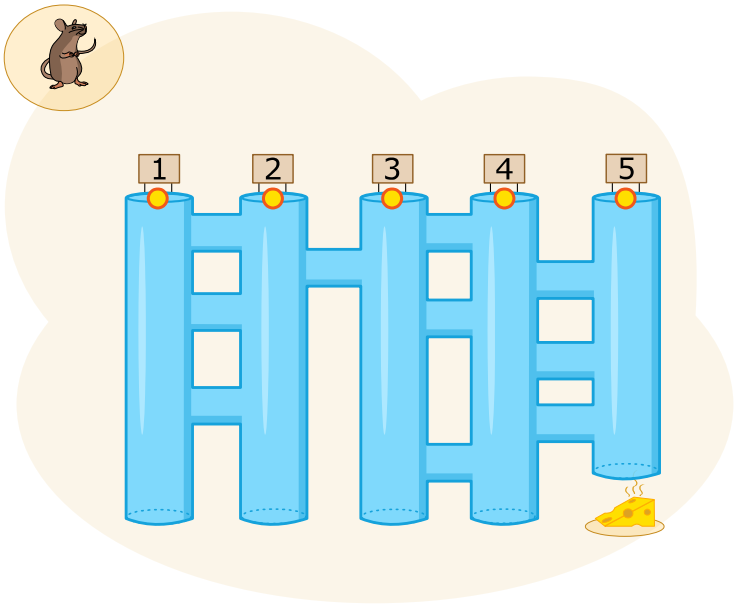
SMART FUTURES

Tube system

A mouse is at the entrance of a tube system. It wants to reach the cheese at the end of tube number 5. The mouse always follows these instructions:

1. Go downwards until a crossing
2. At the crossing, go across to the next vertical tube
3. Go to instruction 1



QUESTION

In which tube should the mouse start so that it reaches the cheese?

A. 1

B. 3

C. 4

D. 5

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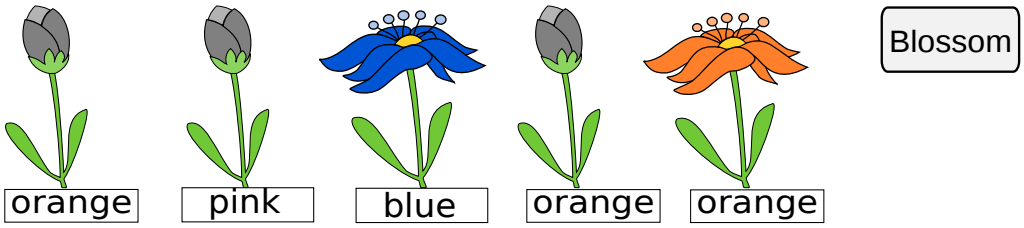
Blossom

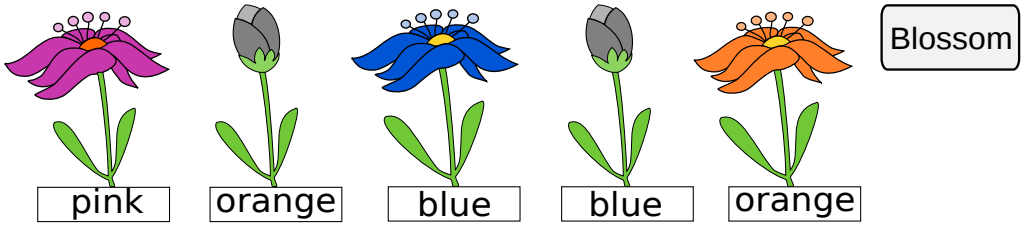
Jane is playing a computer game. First the computer secretly chooses colours for five buds. The available colours for each flower are blue, orange, and pink. Jane has to guess which flower has which colour. She makes her first five guesses and presses the Blossom button. The buds, whose colours she guessed correctly, break into flowers. The others remain as buds.

Jane's first go:



Jane then has another go at guessing and presses the Blossom button again.

Jane's second go:



QUESTION

What colours did the computer choose for the flowers?

A. blue pink blue orange orange

B. pink blue blue blue orange

C. pink blue blue pink orange

D. pink pink blue pink orange

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SMART FUTURES

Footprints

The instructions for a 1-tree:
- Step forward 1 step to make one footprint, go back in your own prints.

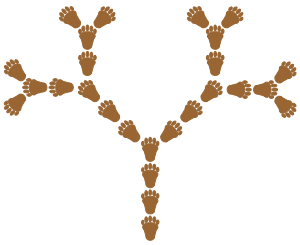
When you know how to make a 1-tree, you can learn how to make a 2-tree:
- Step forward 2 steps to make two footprints.
- Turn left and make a 1-tree.
- Turn right and make a 1-tree.
- Go back in your own prints.

It is easy to explain how to create a 3-tree because a 3-tree consists of 2-trees:
- Step forward 3 steps to make three footprints.
- Turn left and make a 2-tree.
- Turn right and make a 2-tree.
- Go back in your own prints.

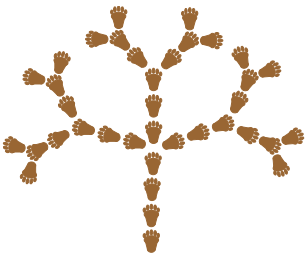
QUESTION

In a similar way you can create a 4-tree.
Which of the following trees is a proper 4-tree?

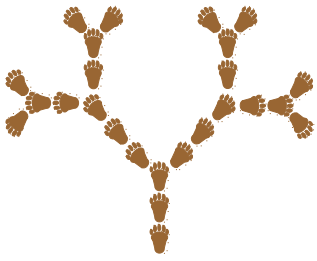
A.



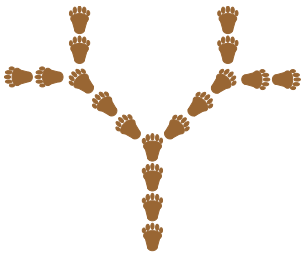
B.



C.



D.



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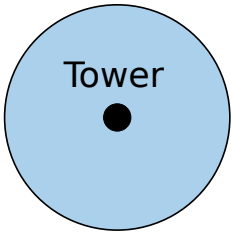
SMART FUTURES

storm-proof network

On a small green island a network of mobile phone towers is set up. Each tower covers a circular area. When the coverage area of two towers overlaps the towers are said to be directly connected. Towers can also be indirectly connected if there is a chain of directly connected towers between the two towers.

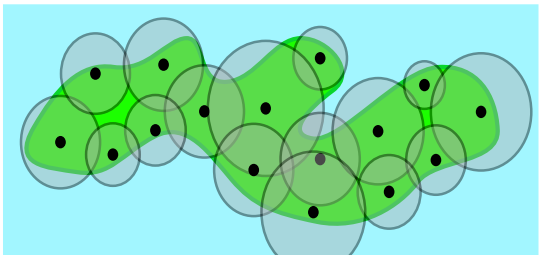


The islanders want to make the network of towers storm proof. This means that even if one tower breaks down all other towers must still be connected, either directly or indirectly.

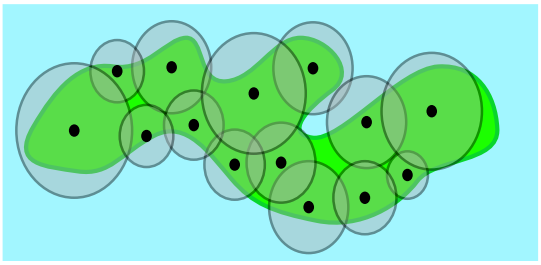
QUESTION

Which system shown below is a way to create a storm-proof network on the island?

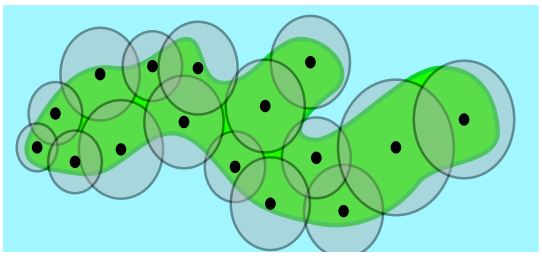
A.



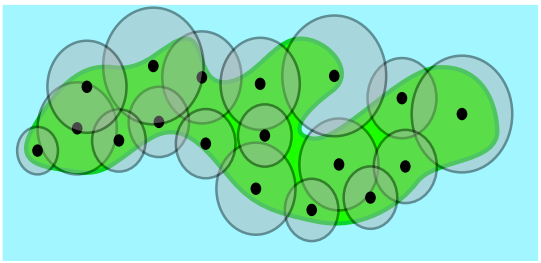
B.



C.



D.



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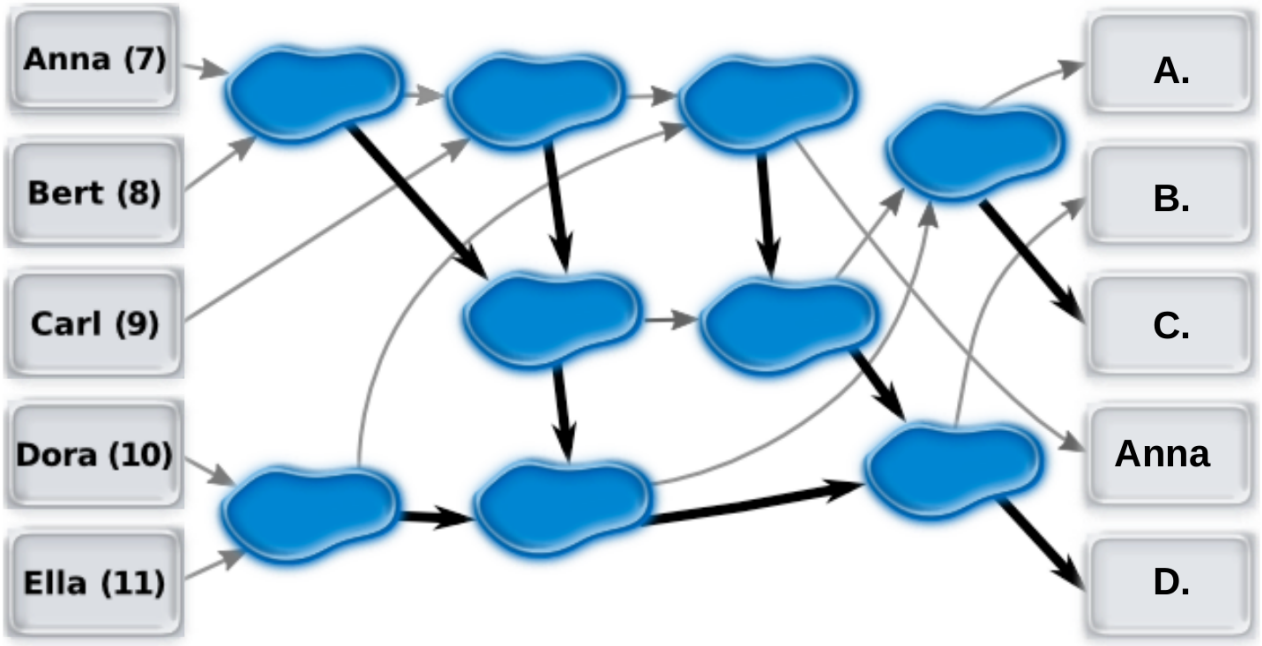
SMART FUTURES

Puddle jumping

Anna (age 7), Bert (age 8), Carl (age 9), Dora (age 10), and Ella (age 11) play a game where they jump from puddle to puddle.

They have placed arrows between the puddles, and they all start on the left side as indicated. When a child jumps into a puddle, he or she waits for a second child to arrive. Then the older child will follow the thick arrow, and the younger child will follow the thin arrow.



QUESTION

The place Anna finishes is shown in the picture. Where will Dora finish (A, B, C, or D)?

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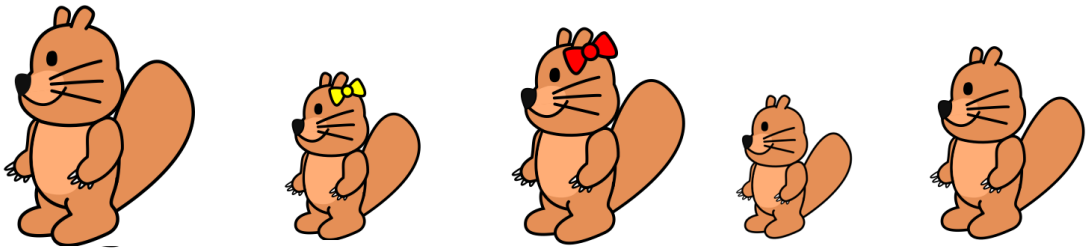
Height game

Young beavers Amy, Beavy, Cuttree, Diggy, and Eary want to play a game with you. They all stand in a line. Then they each count how many taller beavers are in front of them and behind them. They give the results to you on a slip of paper:

Name	Number of taller beavers	
	in front	behind
Amy	1	2
Beavy	3	1
Cuttree	1	0
Diggy	0	0
Eary	2	0



QUESTION

Beavy is standing as shown in the picture. In what order are all the beavers standing?

A. Diggy, Cuttree, Amy, Beavy, Eary

B. Amy, Cuttree, Diggy, Beavy, Eary

C. Diggy, Amy, Cuttree, Beavy, Eary

D. Diggy, Amy, Eary, Beavy, Cuttree

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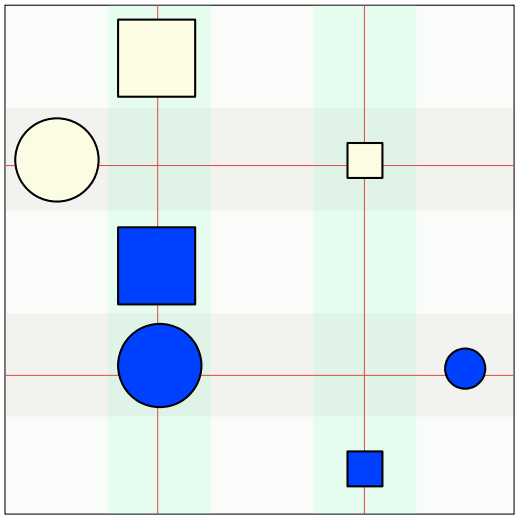
SMART FUTURES

True or false

Alice and John are playing a game of "True or false" on the magnetic whiteboard in their classroom. Alice has stuck seven different magnetic shapes on the board. She then makes four statements about the shape, colour, size, and position of the shapes. Only one statement is allowed to be true. John must figure out which one it is.



QUESTION

Which of the following statements is true?

A. At least one blue shape is higher than one of the yellow shapes.

B. All of the square shapes are higher than all of the circle shapes.

C. All of the small shapes are to the right of all of the big shapes.

D. At least one yellow shape is to the right of all of the blue shapes.

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SMART FUTURES

Cross Country

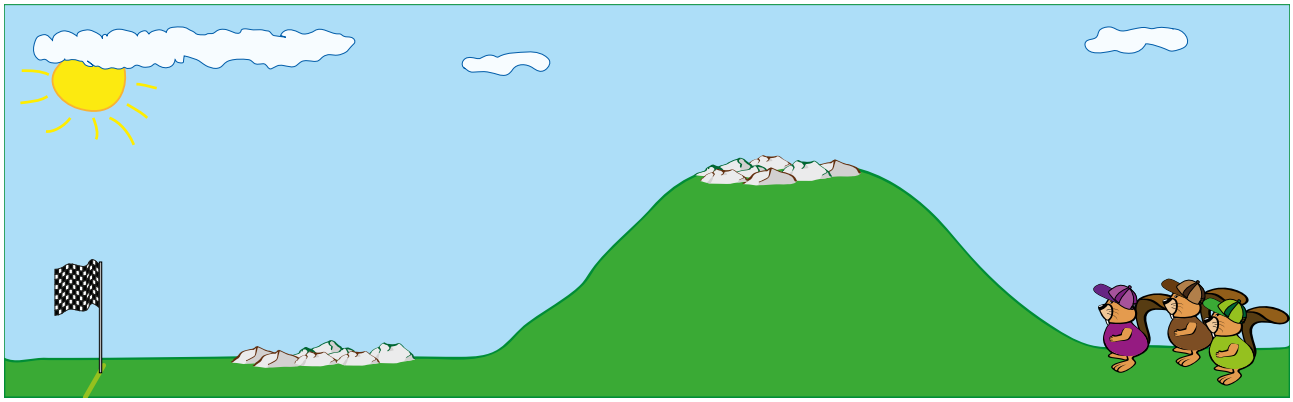
Three very fast beavers will compete in a cross-country run.

Mr. Brown will overtake one beaver when running uphill.

Mrs. Pink will overtake one beaver when running downhill.

Mrs.Green will overtake one beaver when running across rocks.

The terrain is shown in the picture: uphill, followed by some rocks, downhill and then some more rocks. Mrs. Pink starts in the first position, followed by Mr. Brown and Mrs. Green.



QUESTION

In which order will the beavers finish the race?

A. Mrs Pink, Mr Brown, Mrs Green

B. Mr Brown, Mrs Pink, Mrs Green

C. Mr Brown, Mrs Green, Mrs Pink

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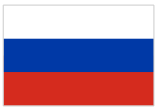


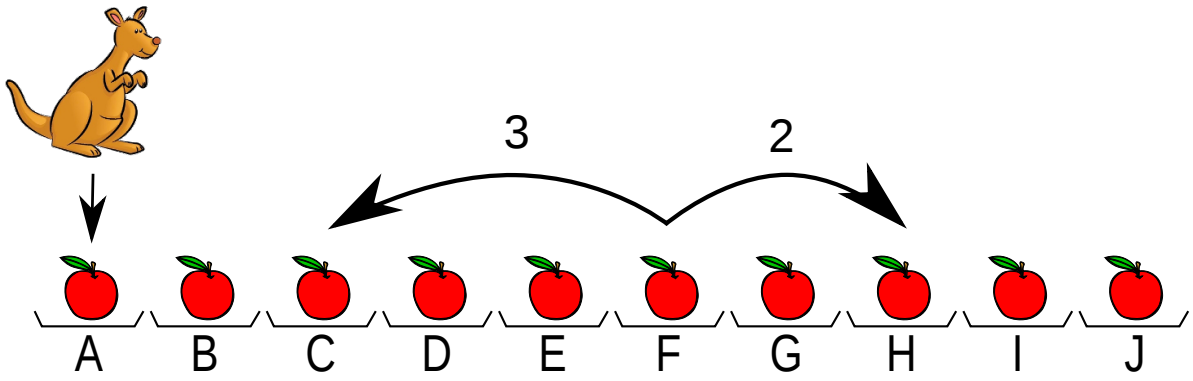
Kangaroo

There are 10 plates in a row. There is one apple on each plate.

Skippy the kangaroo loves to jump. First, he jumps onto the leftmost plate with the letter A. On each single jump after this, he either jumps forward two plates, or backwards three plates. (An example of the two possible jumps from one plate is shown with arrows in the picture.)

Skippy only jumps onto plates with an apple.

If he jumps onto a plate, he collects the apple from it.



QUESTION

If Skippy collects all 10 apples, which apple does he collect last?

A, B, C, D, E, F, G, H, I, or J?

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