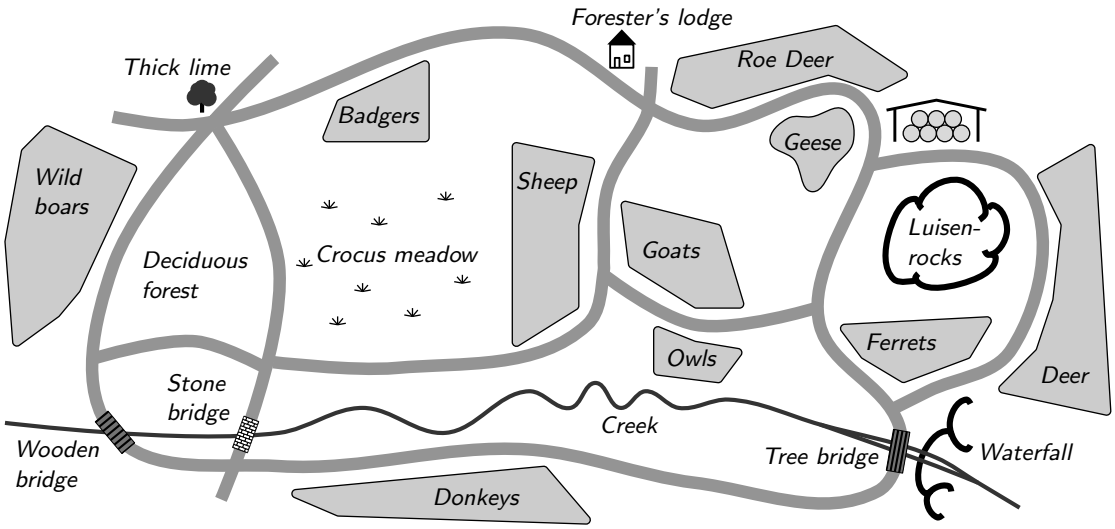
1 Animals in winter

Eleonora walks with her parents and her friend Coco in the snowy wildlife park. They are curious to see what the animals do in winter.



They start at the Thick lime, pass the wild boars and cross the bridge on the direct way to the waterfall. There everyone marvels at the huge icicles. After the waterfall they turn right. At the barn with the hay bales for the winter, they turn right again. At the forester's lodge they take a break and look at the map.

"In all the animal enclosures we passed, we saw exactly 3 animals," Eleonora notes.

"Except for the donkeys," says Coco, "they were all hiding."

How many animals could we see on the way to the forester's lodge?

(E) 12

(T) 14

(N) 15

(Z) 17

(A) 21

2 Ladybirds

Marlene discovered ladybirds in a crack in the wall. Some had 2 points and the others had 7 points.

"The ladybirds were sitting close together, it looked like they were cuddling," says Marlene. "This is how they protect themselves from the cold," Marlene's mother explains. Marlene's little brother Matteo wants to know how many points the ladybirds had in total.

"I didn't count," says Marlene. "But I remember that there were as many 2-point ladybirds as 7-point ladybirds."

How many points could there have been <u>in total</u>?

(P) 12

(V) 23

(O) 34

(A) 45

(L) 56

3 Dog jumpers

Sebastian goes for a walk with his 5 young dachshunds. All of them are wearing a thick jumper to keep them nice and warm.

Jack's jumper is not plain.

Einstein's jumper even has more than 2 colours.

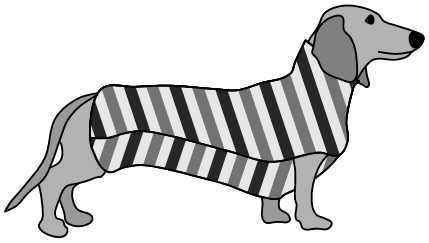
Daisy's jumper is striped.

Maggie's jumper has ducks on it.

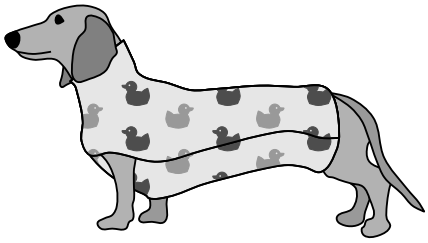
Kalle's jumper is plain orange.

Which of these dachshunds is Jack?

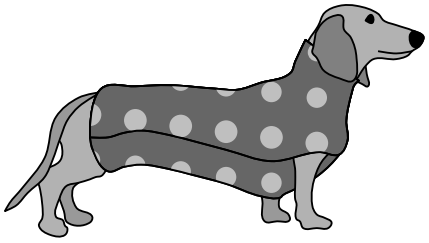
(U)



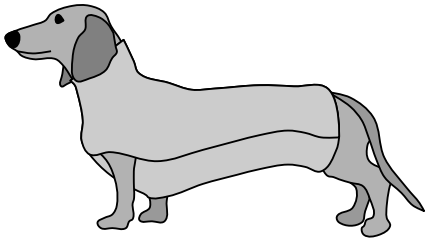
(K)



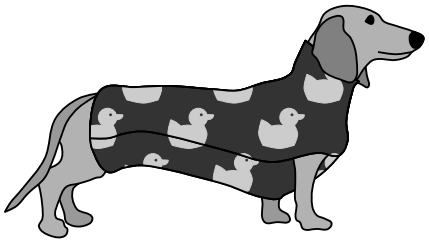
(D)



(E)



(N)



4 Crossword animals

After playing outside, Hannah and Jonas drink a cup of warm tea in the kitchen. On the kitchen table they discover a puzzle in a magazine:

E	A	F	R
S	H	I	O
O	C	S	N
L	A	D	I

The names of animals are to be searched for. Letter by letter may be read so that the next letter is always directly above, below, to the left of or to the right of it.

Jonas immediately discovers the word LACHS: He starts at the bottom left at the L and goes from there first to the right, then up, up again and then to the left.

Which of the following animals <u>cannot</u> be found like this?

(L) SCHAF

(A) OCHSE

(C) DACHS

(H) FROSCH

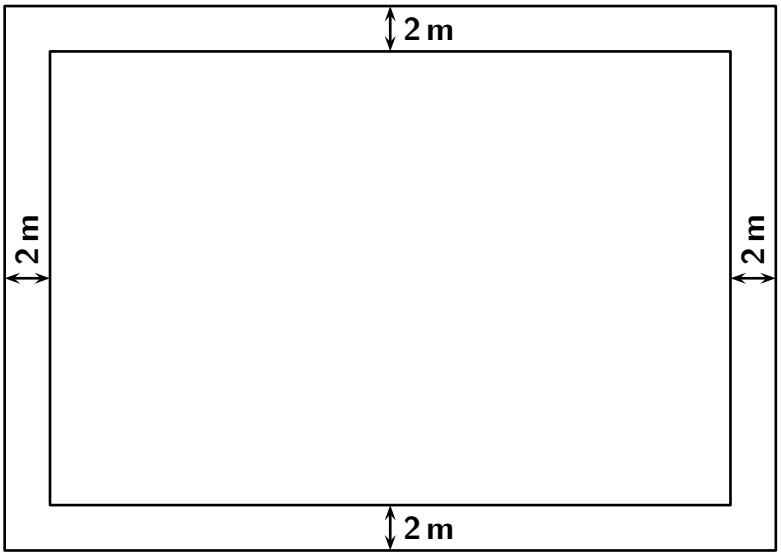
(S) FISCH

5 Wild boars

While playing in the forest, we saw a pile of building material. A second fence was built around the rectangular wild boar enclosure. This is to better protect the wild boars from swine fever.

The old fence is 150 metres long and 100 metres wide.

The new fence is exactly 2 metres from the old fence on all four sides.



How many metres longer is the new fence than the old one?

(F) 12 metres

(E) 16 metres

(D) 20 metres

(G) 22 metres

(I) 30 metres

6 Chocolate animals

Today, on St Nicholas' Day, the siblings Lisa, Tim, Ella and Pia scurried to their boots as soon as they got up. Between oranges, apples and nuts, a chocolate animal was hidden in each boot.

When Aunt Birgit comes in the afternoon, the children ask her a riddle:

"In our boots were a kangaroo, a beaver, a frog and a hedgehog made of chocolate. You have to guess who got which animal."

The children give three clues:

"Lisa got a beaver."

"Tim didn't get a frog."

"Ella didn't get a kangaroo."

Aunt Birgit thinks and realises: "I can't solve the riddle like that. There are several possibilities."

The children think of a fourth clue. Now Aunt Birgit can really find out who got which animal.

What could the fourth clue be?

(X) "Tim got a kangaroo."

(W) "Pia didn't get a beaver."

(Ö) "Ella got a frog."

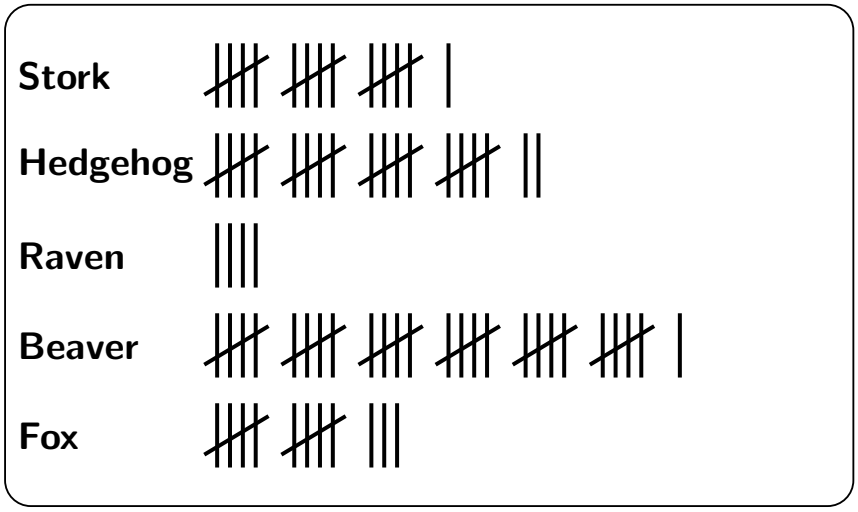
(B) "Tim didn't get a hedgehog."

(Y) "Pia got a frog."

7 School mascot

At our school we are choosing a school mascot this week. There are 5 animals to choose from. All children are allowed to cast one vote.

In the secretary's office there is a list of the votes that have been counted so far:



There are still 12 votes missing from class 4b.

The animal with the most votes at the end will be the school mascot. Which animal could that be?

(E) only the stork or the fox

(M) only the beaver

(G) only the hedgehog or the beaver

(S) only the raven

(I) only the stork, the hedgehog or the beaver

8 Animal biscuits

Jule, Milan, Lara, Paul and Zoé baked biscuits at Paul's house. They found great animal biscuit cutters and baked kangaroos, hedgehogs and rabbits.

After baking, they realise: One hedgehog weighs just as much as one rabbit. One kangaroo weighs as much as two rabbits.

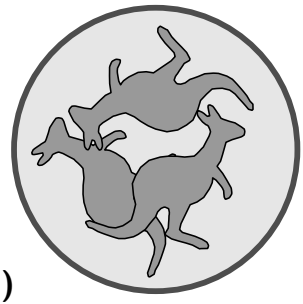
And now it's time to taste! Everyone takes a plate of biscuits.

Jule has the most biscuits on her plate.

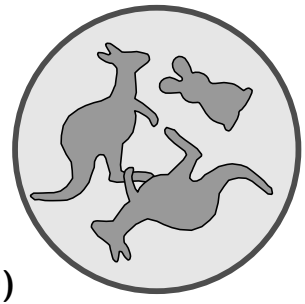
Milan has fewer biscuits on his plate than Jule, but they weigh the same as the biscuits on Jules' plate.

Which plate is Milan's?

(P)

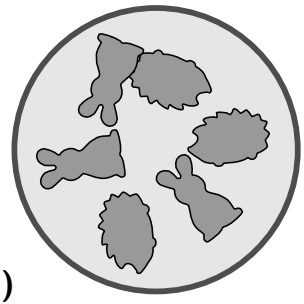


(D)

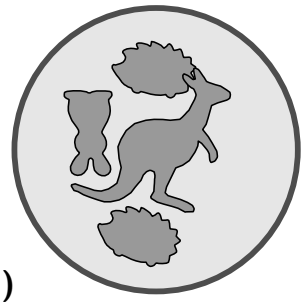


(A)

(S)



(N)



9 Dog robot

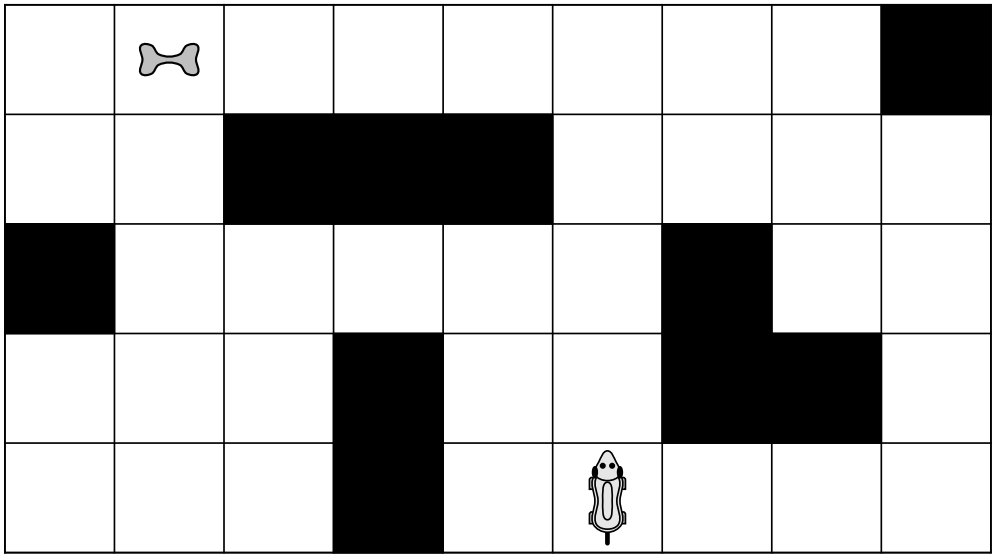
The dog robot Robbie is demonstrated in the Museum of Technology. He is steered through the course using a remote control with 4 buttons:

If you press the ↑ button, Robbie moves forward one field.

If you press the ↓ button, Robbie goes one space backwards.

If you press the ↱ button, Robbie turns to the right on the spot.

If you press the ↰ button, Robbie turns to the left on the spot.



The museum guide explains: "Robbie doesn't run into the obstacles. If you steer him towards an obstacle, he simply stops."

Which of the sequences of buttons below will take Robbie to the bone?

(G) ↑ ↑ ↰ ↑ ↑ ↑ ↑ ↱ ↓ ↓

(B) ↑ ↑ ↑ ↑ ↰ ↑ ↓ ↑ ↰ ↑

(Ä) ↱ ↑ ↑ ↑ ↰ ↑ ↑ ↑

(J) ↑ ↑ ↱ ↓ ↓ ↓ ↓ ↰ ↑ ↑

(Z) ↰ ↰ ↓ ↓ ↰ ↓ ↓ ↓ ↓ ↱ ↓

10 Plumage

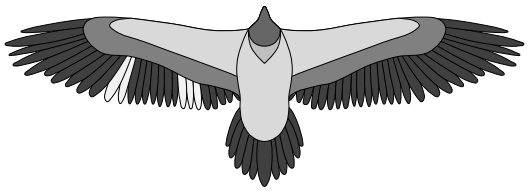
Lina learns at the nature conservation centre that bearded vultures have some feathers bleached before they are released into the wild. This makes it possible to recognise them later when observing them in flight. This year 5 bearded vultures were released.

Bavaria had more feathers bleached than Recka but less than Dagmar.

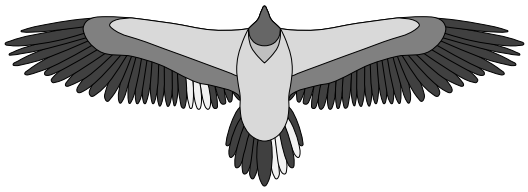
Wally and Herculis have no bleached feathers on their tails.

Which of the following pictures shows Bavaria?

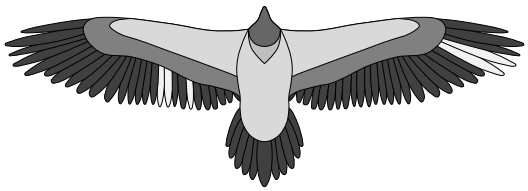
(M)



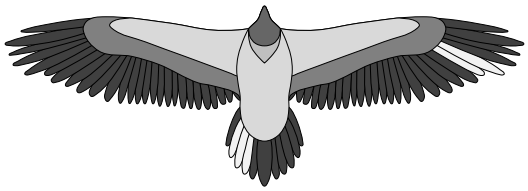
(T)



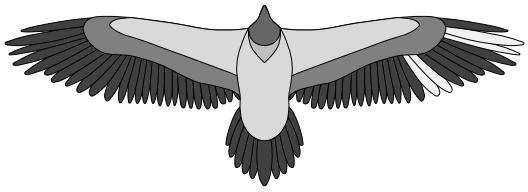
(N)



(R)



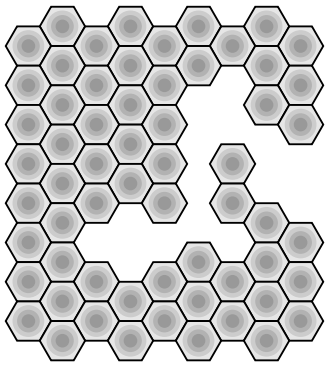
(S)



11 Honeycomb

Antonia and Liam visit Liam's aunt, who is a beekeeper. This year her bees have produced a lot of honey.

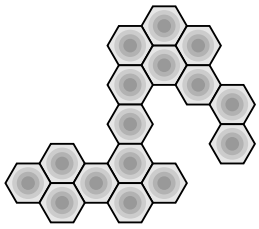
Antonia and Liam look at a fragment of a honeycomb:



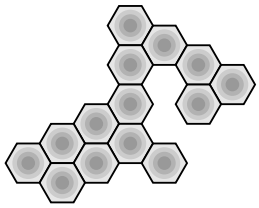
"The honeycombs are hexagonal," says Antonia. "And all of them are quite regular," adds Liam. A piece is missing from the middle of the fragment.

Which piece fits into the gap?

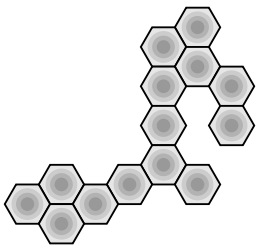
(X)



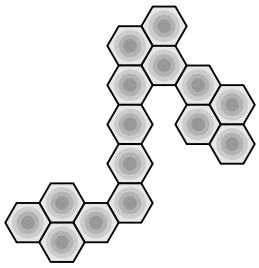
(B)



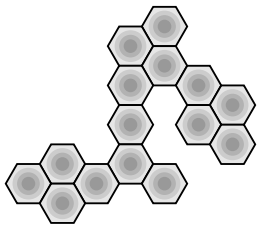
(Y)



(H)



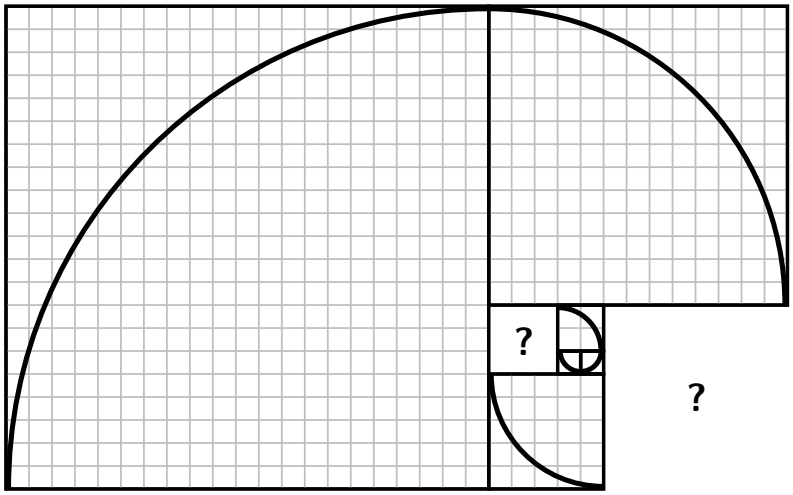
(Q)



12 Snails

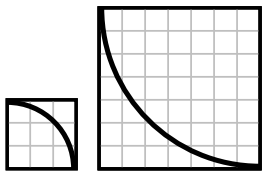
Frieda has discovered snails in a sheltered spot in the garden. "The snails hibernate there," her mother explained to her. She learned how to draw snails from a book:

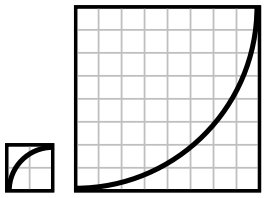
Frieda draws quarter circles on squares with a compass. She starts with a small square that is 1 box wide. Then she places more squares counterclockwise that fit: another square that is 1 box wide, then a square that is 2 boxes wide, and so on.

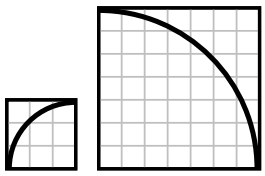


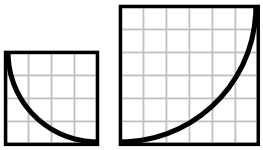
Two paper squares have accidentally fallen down.

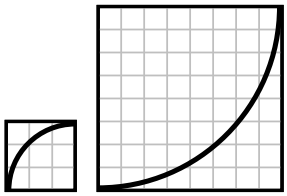
Which two squares complete the snail spiral?

(E) 

(U) 

(N) 

(L) 

(B) 

13 Cats

Pina is supposed to go buy cat food after school. Her cat Bella likes the Casimir brand best. The Christmas varieties are on sale right now.

Pina is supposed to buy exactly 12 cans and spend as little money as possible on them. She thinks about how she can combine the offers.

What is the lowest price Pina has to pay for 12 cans?

(A) 10.00 euros

(B) 10.20 euros

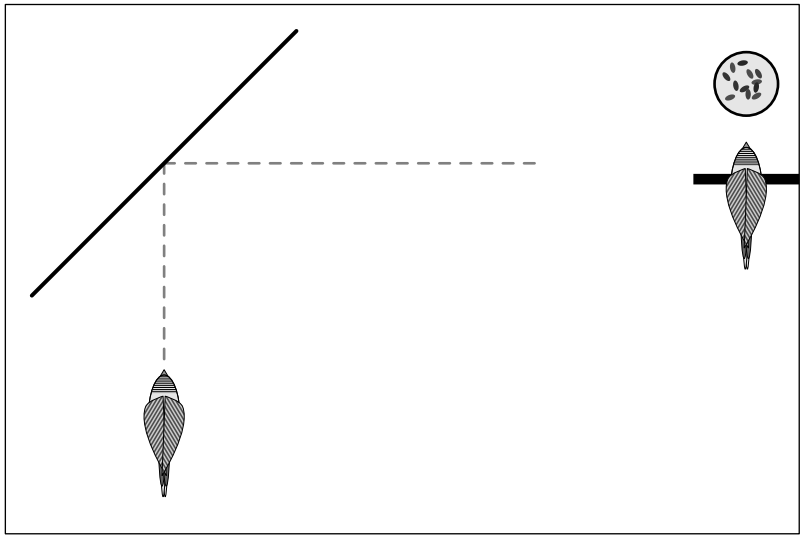
(C) 10.50 euros

(D) 10.70 euros

(E) 10.80 euros

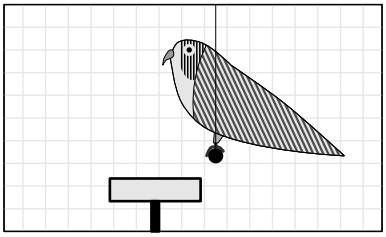
14 Animals in the mirror

In the cage of our two budgies, Amadeus and Krümel, I placed a large mirror diagonally in one corner.

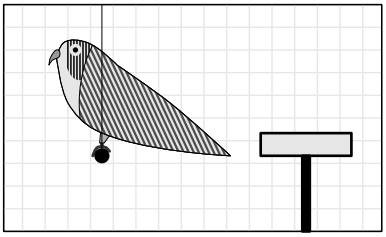


If Amadeus looks in the mirror as in the picture, he sees Krümel and the food bowl. What could Amadeus see in the mirror?

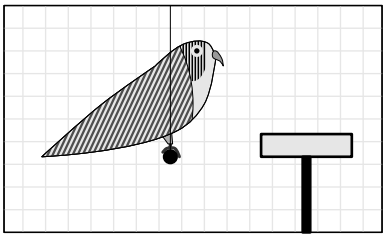
(W)



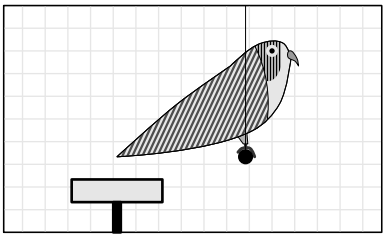
(V)



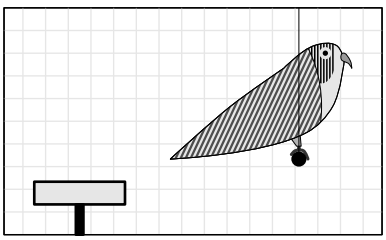
(F)



(P)



(Ö)



15 Mole

The mild weather has made the mole pair Gregor and Mila lively. They quickly created 4 molehills on the meadow. They look at their work in the sunset.

Gregor looks out of one of the 4 molehills and Mila out of another.

How many different possibilities are there for this?

(E) 8

(K) 10

(F) 12

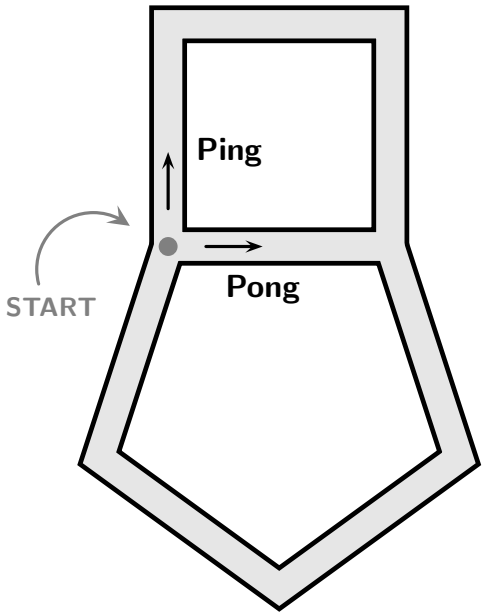
(N) 16

(I) 18

16 Mouse race

Tilman has built a race track with his uncle for his two mice Ping and Pong. It consists of a square and a pentagon. The sides of the pentagon are the same length as the sides of the square.

Right at the first test, the two mice run off in different directions from the starting point. They are both equally fast. Ping always runs clockwise around the square. Pong always runs clockwise around the pentagon.



Tilman has determined with the stopwatch: Pong completes a full lap around the pentagon in exactly 10 seconds.

How many seconds after the start will the mice Ping and Pong meet the next time?

(E) 17 seconds

(A) 22 seconds

(O) 25 seconds

(Ü) 26 seconds

(I) 30 seconds

17 Chickens

Carla and Diego go on an excursion to the children's farm at the weekend. They learn from the farmer that the chickens are particularly diligent at the moment. "Yesterday they laid 10 brown and 14 white eggs," the farmer tells them.

Today Carla and Diego are allowed to collect the freshly laid eggs. They count how many eggs there are of each kind and give the farmer a task: "There are half as many brown eggs today as yesterday, but twice as many white eggs as yesterday."

The farmer has to find out how many eggs there are in total today.

How many eggs did the hens lay in total today?

(X) 25

(E) 29

(Ö) 30

(S) 33

(R) 35

18 Zebras

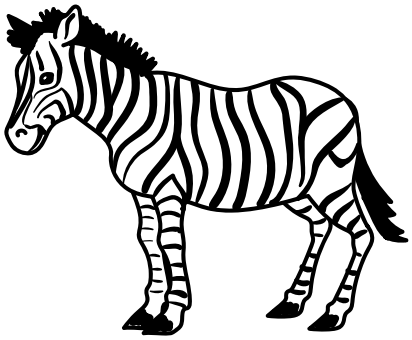
There are 5 zebras in our zoo.

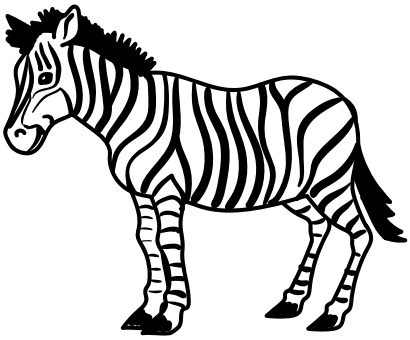
The zebras Calipso and Chantal are twins and look exactly the same.

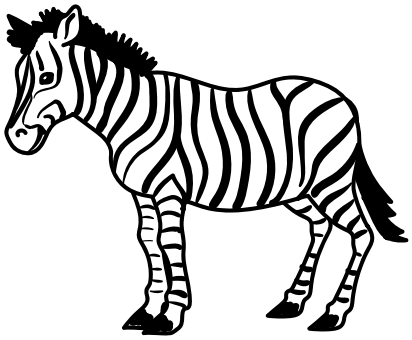
The zebras Rübe and Rabauke are also twins and look exactly the same.

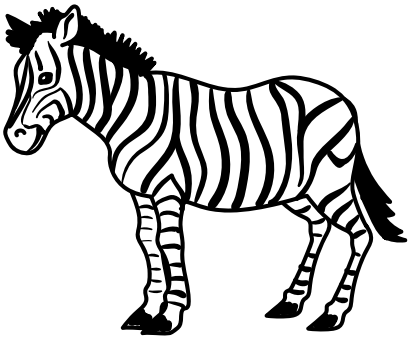
The fifth zebra is called Diana, her stripe pattern looks a bit different.

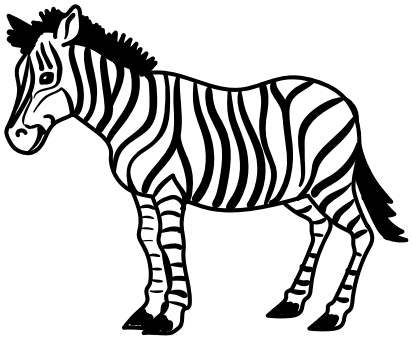
Which zebra is Diana?

(O) 

(J) 

(E) 

(L) 

(Q) 

19 ABC, the cat ran in the snow

Anna, Nele, Alina, Linus and Ella are playing in the snow. Four of them draw letters in the snow, each of them all the letters of their own name.

The fifth child has taken the neighbour's cat in its arms and therefore cannot draw any letters in the snow.

Which child has the cat in its arms?

(M) ANNA

(Y) NELE

(W) ALINA

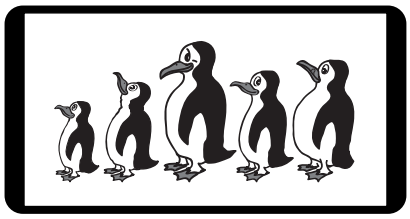
(F) LINUS

(G) ELLA

20 Penguins

Meike and Gregor are in the zoo. They want to watch the feeding of the penguins. Just before it starts, five penguins are already standing neatly in a row, waiting quietly. Meike and Gregor take a photo of them.

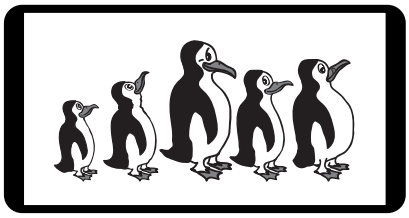
Meike took this photo from the left:



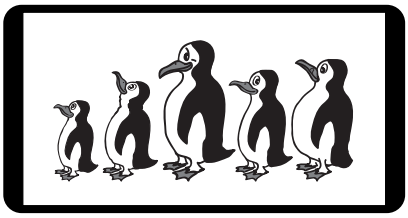
Gregor took a photo from the right at the same time.

What does Gregor's photo look like?

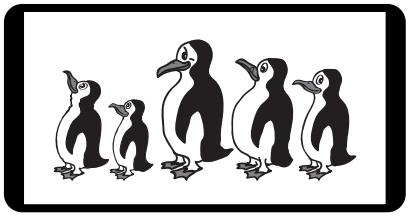
(A)



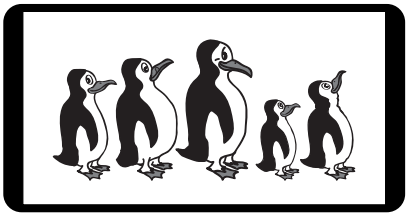
(Z)



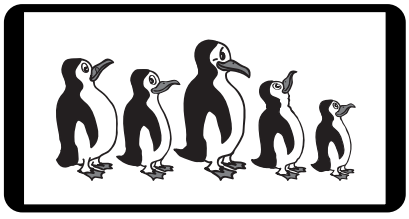
(P)



(G)

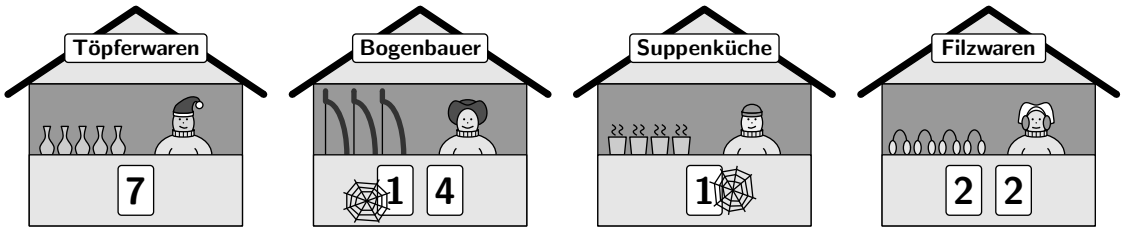


(C)



21 Spider web

A medieval Christmas market has opened nearby. There are 24 booths of craftswomen and craftsmen there. They are numbered from 1 to 24.



A spider web is attached to each 1 as decoration. All other numbers are clear.

How many spider webs in total are there on the numbers of the 24 booths?

(Ä) 10

(O) 13

(B) 15

(I) 17

(D) 20

22 Walrus puzzle

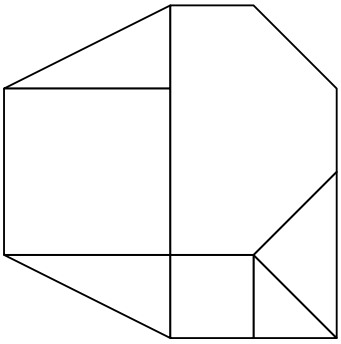
The ice floe on which Waldemar the walrus usually takes his nap has broken into several pieces:

4 triangles, 2 squares of different sizes and one pentagon.

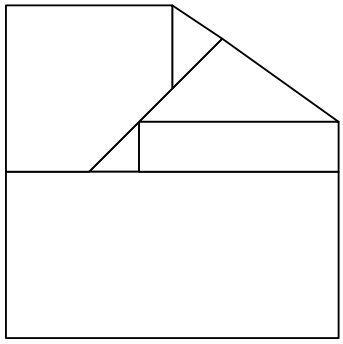
Waldemar pushes all the pieces back together. During the night, hopefully they will freeze together again.

What might Waldemar's ice floe look like?

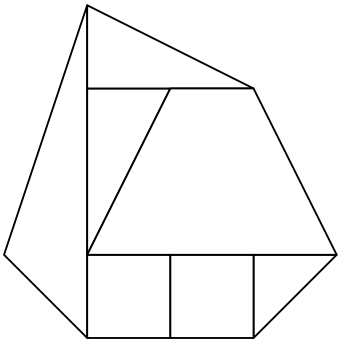
(S)



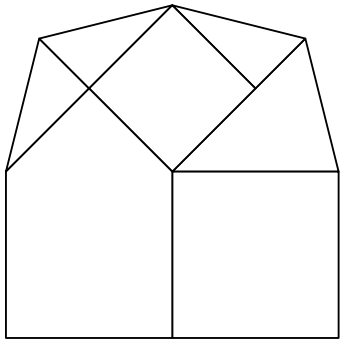
(Y)



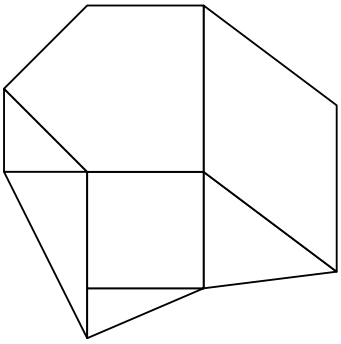
(W)



(U)



(H)

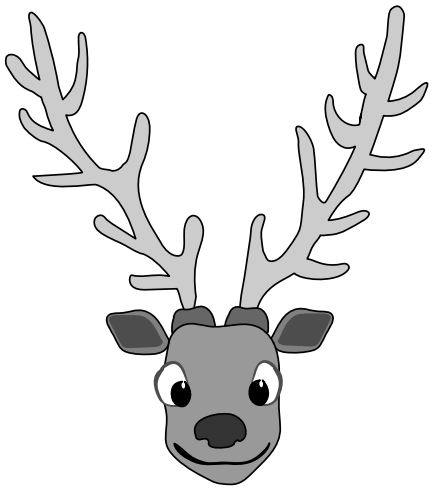


23 Reindeer antlers

Sabrina and Timo visit a reindeer enclosure. The reindeer is the only species of deer in which both the male and female animals have antlers. Every year they shed them and grow new ones.

There are 3 curious reindeer standing by the fence. "The antlers have many ends – these are the tips on the antlers," Timo knows. The two look closely at the antlers.

The first reindeer peers over the fence, it has the biggest antlers:



His antlers have as many ends as the antlers of the second reindeer and the antlers of the third reindeer together.

The second reindeer's antlers have 4 more ends than the third reindeer's antlers.

How many ends does the third reindeer's antlers have?

(E) 5

(N) 6

(J) 7

(P) 8

(M) 9

24 Christmas Eve

At the beginning of the holidays, Matheo and his friend Linus go to the zoo. Some of the animals receive presents today. Matheo also has a present for Linus. Now Matheo writes a card. It says:

F R Ö H L I C H E F E R I E N

But encrypted, of course! So Linus has something to think about.

For the encryption, Matheo first writes down the alphabet:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Ä Ö Ü

Above his message he writes the digits of today's date 24.12.2022, and again from the beginning until there is a number above each letter:

2 4 1 2 2 0 2 2 2 4 1 2 2 0 2
F R Ö H L I C H E F E R I E N

Now Matheo replaces each letter with the letter that is in the alphabet as many places before as the number above the letter indicates. So he replaces the F at the beginning with the letter D, which is 2 places before the F in the alphabet. He replaces the R with N, which is 4 letters before the R in the alphabet, he replaces the Ö with Ä, which is 1 letter before the Ö and so on. The encrypted message reads like this:

D N Ä F J I A F C B D P G E L

To decode, Linus must first write the digits of today's date 24.12.2022 above the message until there is a number above each letter. Then he must proceed in reverse: He must replace each letter with the letter that is in the alphabet as many places thenafter as the number above the letter indicates.

The solution word in the Känguru-Adventskalender maxi 2022 was also encoded using Matheo's method.

What is the decoded solution word?

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _