Till läraren

Välkommen till Kängurutävlingen – Matematikens hopp 2024
Ecolier

- Tävlingen genomförs under perioden 21 mars – 5 april. *Uppgifterna får inte användas tidigare.*
- Sista dag för redovisning av antalet deltagare är den *12 april*. Du får då tillgång till facit och ett kalkylblad där du matar in elevernas svar och sedan får du en sammanställning av klassens resultat.
- Redovisa resultatet senast *30 april*.
- *Tävlingen är individuell* och eleverna får arbeta i 60 minuter. De tre delarna ska genomföras vid *ett och samma tillfälle.*
- Eleverna behöver ha tillgång till papper för att kunna göra anteckningar och figurer. Linjal behövs inte.
- *Miniräknare eller sax får inte användas. Observera att telefoner, datorplattor och datorer inte heller får användas.*
- Läs igenom problemen själv i förväg så att eventuella oklarheter kan redas ut.
- Kontrollera att kopiorna blir tillräckligt tydliga så att nödvändiga detaljer syns.
- Besök *Kängurusidan* på ncm.gu.se/kanguru där vi publicerar eventuella rättelser och ytterligare information. Där finns också information om hur kalkylbladet fungerar.
- Samla in problemformulären efter tävlingen. Problemen får inte spridas utanför klassrummet förrän efter 30 april, men ni får gärna arbeta med problemen i klassen.

Mikael Passares stipendium
Mikael Passare (1959–2011) var professor i matematik vid Stockholms universitet. Han hade ett stort intresse för matematikundervisning på alla nivåer och var den som tog initiativ till Kängurutävlingen i Sverige. Mikael Passares minnesfond har instiftat ett stipendium för att uppmärksamma elevers goda matematikprestationer. Information om hur du nominerar elever kommer tillsammans med facit och kommentarer.

Lycka till med årets Känguru!

e-post: kanguru@ncm.gu.se

För administrativa frågor, vänd dig till Ann-Charlotte Forslund:
ann-charlotte.forslund@ncm.gu.se
031–786 69 85

För innehållsfrågor, vänd dig till Ulrica Dahlberg eller Johan Häggström:
ulrica.dahlberg@ncm.gu.se
johan.haggstrom@ncm.gu.se

Svarsblankett

Markera ditt svar i rätt ruta

Uppgift	A	B	C	D	E	Poäng
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Namn:.....

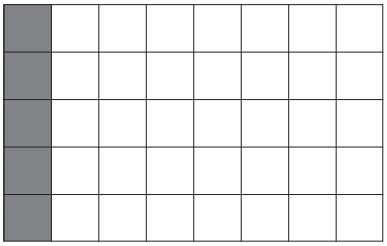
Klass:.....

Kängurutävlingen – Matematikens hopp 2024
Ecolier

Three points problems

1 The grid has 40 squares.
Ira has colored a column.
She will color in one more column.

How many squares will then be white?



A: 8 B: 12 C: 15 D: 24 E: 30

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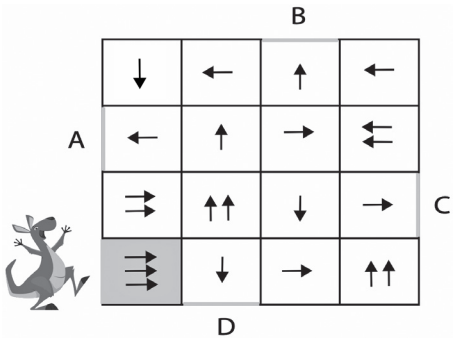
2 Joe starts in the gray box.
The arrows show which direction he should jump.
The number of arrows shows how many squares he has to jump.
Three arrows means he should jump over two squares and land in the third.

Where does he come out?



A: A B: B C: C D: D E: He's not coming out

Norge

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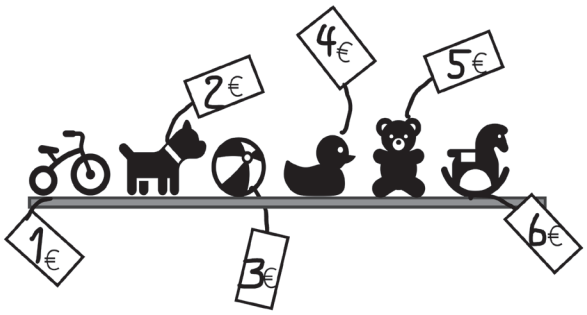
3 Lina bought three of the things on the shelf.
She paid 7 euros.

How much was the most expensive thing she bought?



A: 2 euros B: 3 euros C: 4 euros D: 5 euros E: 6 euros

Nigeria

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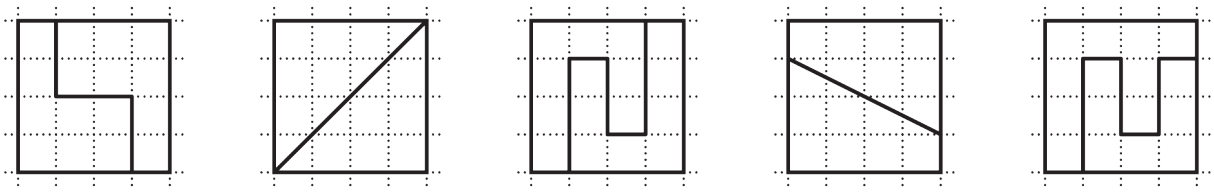
4 Which square is cut into two *different* shapes?



A B C D E

Schweiz

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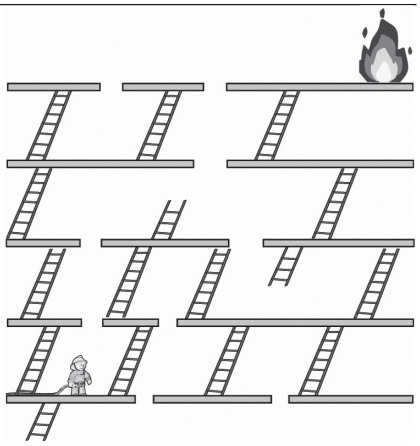
5 The fireman cannot jump but has to climb ladders to get up to the fire.

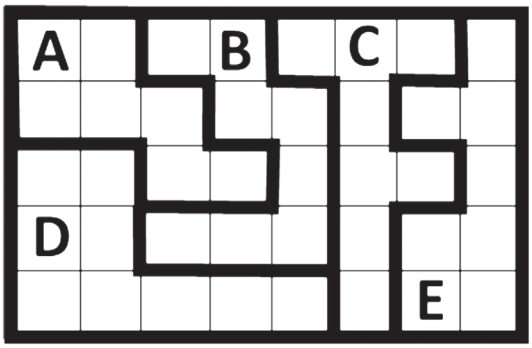
How many ladders must the firefighter use *at least*?



A: 4 B: 5 C: 6 D: 7 E: 8

Danmark

6 Which piece is the biggest?

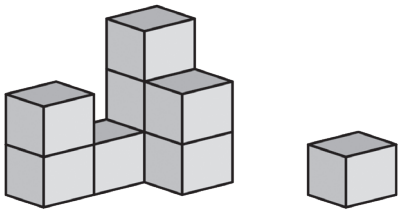


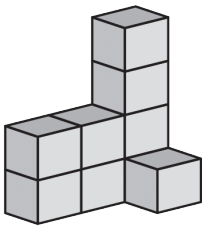
A: A B: B C: C D: D E: E

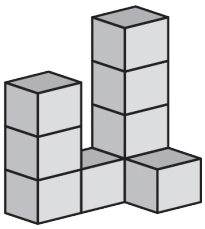
Grekland

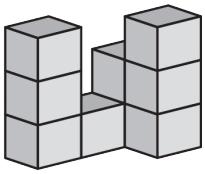
7 A cat knocks off one block from Felix's construction.

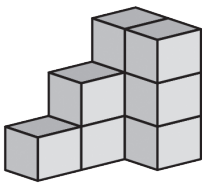
What could this construction have looked like *before* the block was knocked off?

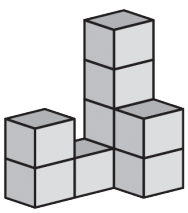


A: 

B: 

C: 

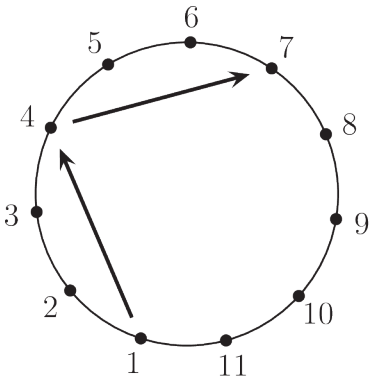
D: 

E: 

Polen

8 Some soccer players are standing in a ring.
They have numbers 1 to 11.
Number 1 has the ball from the start and kicks the ball to the third player to the left.
Whoever gets the ball kicks it on in the same way, to the third player to the left.
The round ends when everyone has had the ball once.

What number has the last person to receive the ball?



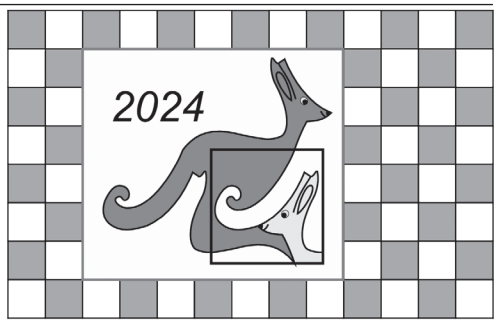
A: 7 B: 8 C: 9 D: 10 E: 11

Ghana

Four points problems

9 Alex has a Kangaroo poster on the kitchen wall.

How many grey tiles are there behind the poster?



A: 15 B: 21 C: 25 D: 30 E: 35

Irak

10 Maja counted from 1000 and she counted one number at a time, 1001, 1002, 1003, 1004, ...
Needing to take a break, she wrote down the last three numbers she counted.
Then her little brother came and erased some of the numbers.

___7, _898, 48__

What numbers has little brother erased?

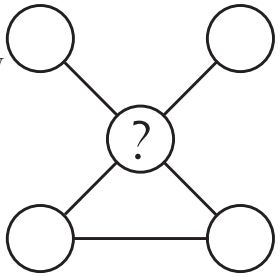
A: 389, 3, 99 B: 489, 3, 96 C: 489, 4, 98

D: 489, 4, 99 E: 488, 4, 99

Iran

11 The numbers 1, 2, 4, 5 and 6 must be in the circles.
There must be one number in each circle and each number can only be in one circle.
The sum of the numbers on the same line must be 11.

Which number must then be in the circle with the question mark?



A: 1 B: 2 C: 4 D: 5 E: 6

Katalonien

12 There are five different kinds of fruit in a bowl:

Ann likes 

Bill likes 

Carl likes 

Dan likes 

Eva likes 

Everyone gets a fruit they like. No one gets the same fruit as another.

What fruit does Bill get?

A:  B:  C:  D:  E: 

Schweiz

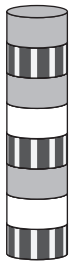
13 The sum of the numbers on the three cards is 782.
Unfortunately, a piece of each card is missing.

What is the sum of the three missing numbers?

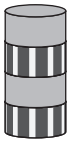
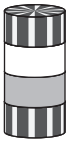
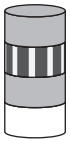
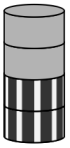
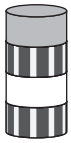
A: 8 B: 9 C: 10 D: 11 E: 12

Grekland

14 Ada has built a tower with eight tiles.
She counts from the bottom and first removes the second tile.
From the new tower, she removes the third tile counting from the bottom.
Then she counts again from the bottom and picks up the fourth tile.
From the tower she then has, she removes the fifth tile counted from the bottom.

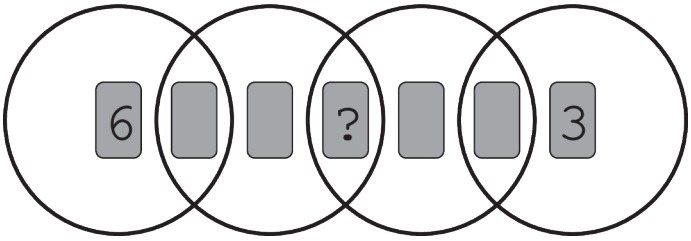


What does the tower look like then?

A:  B:  C:  D:  E: 

Polen

15 Seven cards lie in the four overlapping circles.
The numbers 1, 2, 3, 4, 5, 6 and 7 are written on the cards.
The sum of the numbers in each circle must be 10.



What number must be on the card with the question mark?

A: 1 B: 2 C: 4 D: 5 E: 7

Kina

16 Peter the penguin catches 9 fish every day which he gives to his two young.
Every day one kid gets 5 fish and one gets 4 fish.
In the last few days, one kid has caught 26 fish.

How many fish has the other kid caught?

A: 19 B: 22 C: 25 D: 28 E: 31

Storbritannien

Five points problems

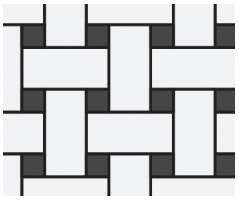
17 Lukas builds the pieces together into a caterpillar. The caterpillar must have both a head and a back and it can have 1, 2 or 3 pieces between the head and the back.

How many different caterpillars can Lukas build?

A: 3 B: 4 C: 5 D: 6 E: 7

Tyskland

18 The picture below shows part of a floor that is covered by two different tiles 



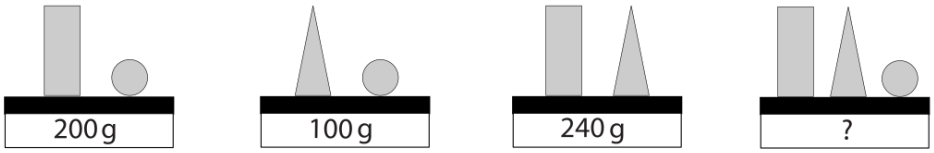
The gray piece measures 23 cm x 11 cm.

What is the side length of the small black square piece?

A: 3 cm B: 4 cm C: 5 cm D: 6 cm E: 7 cm

Finland

19 Lucy weighs some blocks.



How much do the three different blocks weigh together?

A: 270 g B: 280 g C: 290 g D: 300 g E: 310 g

Katalonien

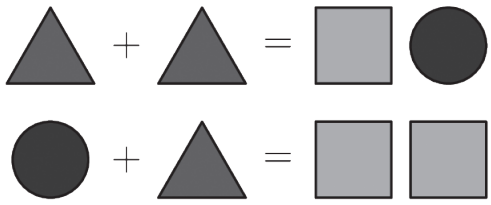
20 The third graders will go on an excursion.
There are 60 children and all of them have reflective vests and backpacks on.
When they line up in a long line, the reflective vests follow the pattern green, yellow, green, yellow ...
The backpacks follow a different pattern: red, brown, orange, red, brown, orange ...

How many children have both a yellow reflective vest and an orange backpack?

A: 3 B: 4 C: 6 D: 8 E: 10

Slovakien

21 Behind the same figure is the same number.
Behind different figures are different numbers.

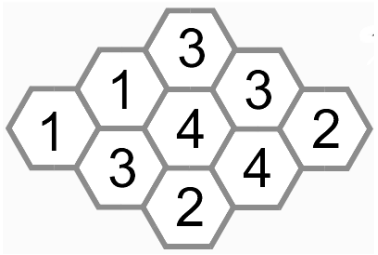


What is the product  ?

A: 0 B: 15 C: 18 D: 28 E: 30

Polen

22 The picture shows a beehive with nine cells.
In some cells there is honey.
The number in the cells tells how many of the neighboring cells contain honey.
Neighboring cells are such cells that have a common side.

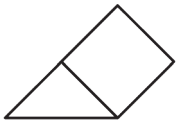


In how many cells is there honey?

A: 4 B: 5 C: 6 D: 7 E: 8

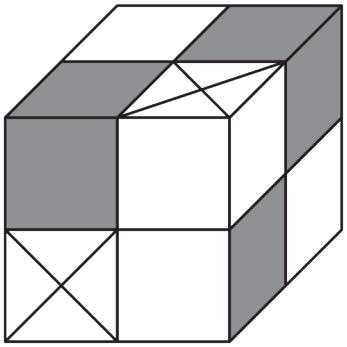
Turkiet

23

There are two types of blocks: white  and grey 

With four white bricks or with one white and one gray brick you can make a small cube.
With eight such small cubes you can build the cube in the picture.

How many white bricks do you have to use *at least*?



A: 8 B: 11 C: 13 D: 14 E: 23

24 There are cookies on a plate on the table.
Olle, Lasse and Bosse go forward and pick up some cookies.
But we don't know in which order they go.

Olle takes all the hearts available on the plate.
Lasse takes all the white cookies available on the plate.
Bosse takes all the large cookies available on the plate.

One of the boys took 3 cookies, one took 6 cookies and one took 7 cookies.
Which pile of cookies did one of the boys take?

A:  B:  C: 

D:  E: 

Polen