Till läraren

Välkommen till Kängurutävlingen – Matematikens hopp 2026
Benjamin

- Tävlingen genomförs under perioden 19 – 27 mars. *Uppgifterna får inte användas tidigare.*
- Du får tillgång till facit och ett kalkylblad. I kalkylbladet matar du in elevernas svar och får en sammanställning av klassens resultat. Facit öppnas klockan 12.00 på tävlingsdagen, lösenord till facit finns i mailet du fått.
- Redovisa resultatet senast *30 april*. Efter det görs både problem och facit fritt åtkomliga.
- *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.
- 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:
ulrica.dahlberg@ncm.gu.se

Svarsblankett

Markera ditt svar i rätt ruta

Uppgift	A	B	C	D	E	Poäng
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Namn:.....

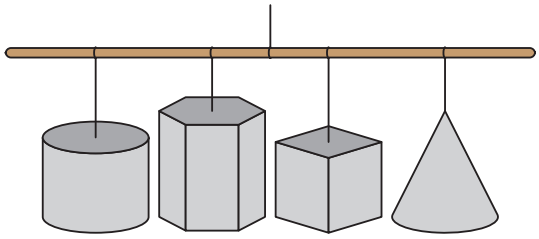
Klass:.....

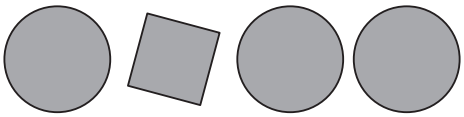
Kängurutävlingen – Matematikens hopp 2026
Benjamin

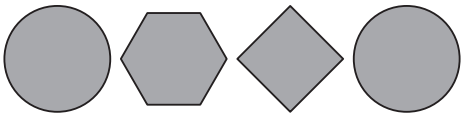
Three point problems

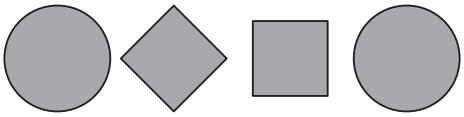
1 There are four solids hanging in the classroom. Betty is looking at them from below.

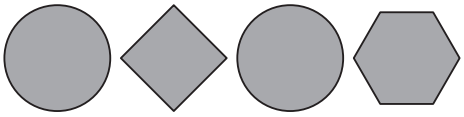
What can she see?

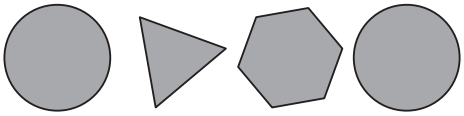


A 

B 

C 

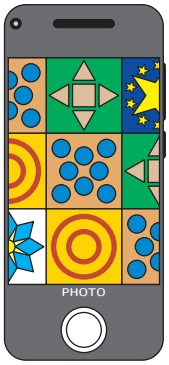
D 

E 

[*Norway*]

2 A floor is made of 5 different tiles. The tiles are laid in a repeating pattern. Eva takes a picture of the floor with her phone, as shown.

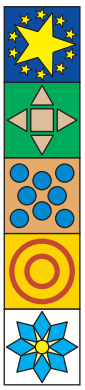
What is the repeated pattern of the 5 tiles?



A 

B 

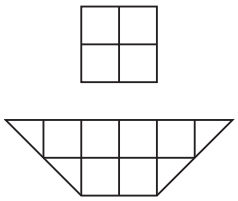
C 

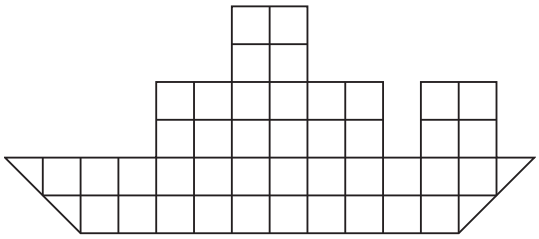
D 

E 

[*Norway*]

3 Stefan has two types of small paper pieces. He wants to make this ship.





How many small pieces of paper in total does he need to make the ship?

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

[*Iran*]

4 A standard dice has six faces numbered from 1 to 6.
The sum of the numbers on opposite faces is always 7.
The numbers on three faces that share a common vertex have a sum of 14.

What are the numbers on the other three faces?

A: 1, 2, 4 B: 3, 5, 6 C: 2, 5, 6 D: 1, 2, 6 E: 2, 3, 4

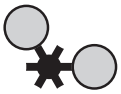
[*Brazil*]

5 On the numberline in the picture there are six points marked. The points are spaced with equal distances. The first point is placed at the number 3 and the seventh point is placed at number 6.

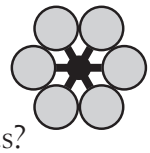
At which number is the third point placed?

A: 3,3 B: 3,5 C: 4 D: 4,5 E: 5

6 Anna wants to make a flower by using templates of this shape:



She puts severel templates on top of each other to make a flower that looks like this:
The templates can overlap.



What is the smallest number of templates she needs?

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

[*Germany*]

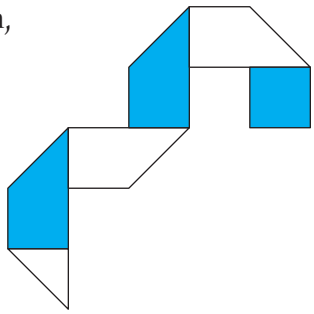
7 A pizza is cut into 8 equal slices. Max eats $\frac{1}{4}$ of the pizza.
Grace then eats half of what is left.

How many slices remain?

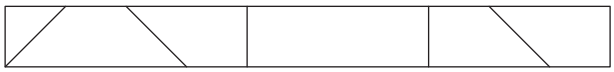
A: 1 B: 2 C: 3 D: 4 E: 5

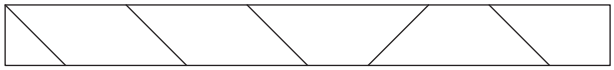
[*Ghana*]

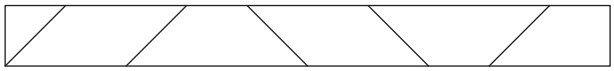
8 Lukas has a rectangular strip of paper. One side is white, the other side is dark.
On the white side he draws 5 lines and folds the strip along them,
as shown in the picture.

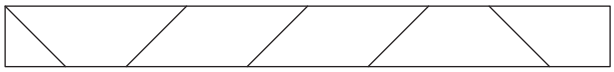


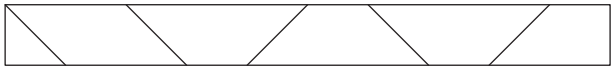
What did the strip look like before folding?

A 

B 

C 

D 

E 

[*Poland*]

Four point problems

9 In a large cave, tours are conducted in three-seater vehicles. The vehicles leave at two-minute intervals, and the ride takes 10 minutes. There are 30 pupils taking the tour. The first group of three started their tour at 13:00.

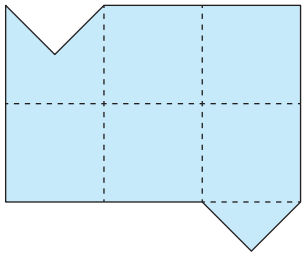
At what time did the last group of three finish their tour?

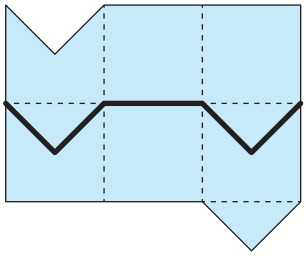
A: 13:18 B: 13:20 C: 13:28 D: 13:30 E: 14:40

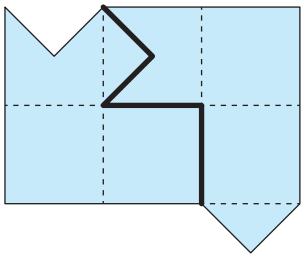
[*Slovakia*]

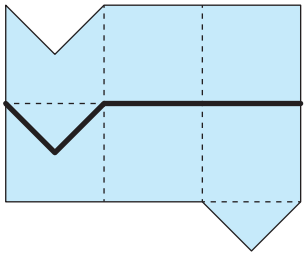
10 This figure is to be cut into two identical parts.
The parts may be flipped or turned.

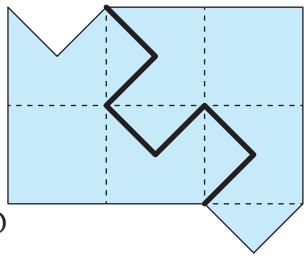
Which option shows how the cut can be made?

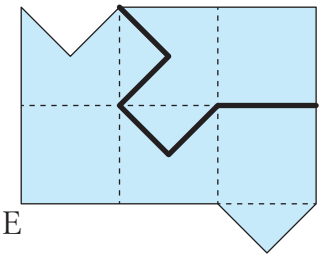


A 

B 

C 

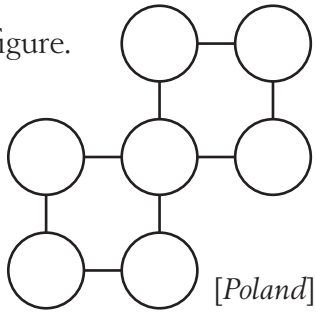
D 

E 

[*USA*]

11 The numbers 0, 1, 2, 3, 4, 5 and 6 are written in the circles in the figure.
The numbers are placed so that the sum of the numbers in each row is the same.

What is the product of the numbers written in the middle row?

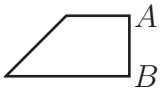


A: 0 B: 15 C: 18 D: 24 E: 30

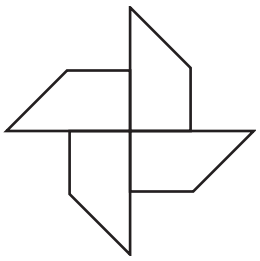
[*Poland*]

12 The trapezium in the picture has a perimeter of 22 cm.
Four of these trapezia are joined together, without overlapping, to form the pinwheel.
The perimeter of the pinwheel is 56 cm.

What is the length of the side AB in the trapezium?



P = 22 cm



P = 56 cm

A: 8 cm B: 6 cm C: 3 cm D: 4 cm E: 5 cm

[*Philippines*]

13 Irma wrote the numbers from 1 to 16 into the cells of a strip of paper, as shown.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Then she folded the strip in half.

1	2	3	4	5	6	7	8

She continued folding it in half in the same way and ended up with only two cells:

1	2

Ira then poked a needle through the whole strip where the number 1 was written, unfolded the strip and added up all the numbers in the pierced cells.

What answer did she get?

A: 64 B: 68 C: 99 D: 128 E: 136

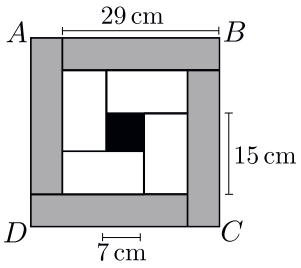
14 There are toffees in a box. Charles, Paul and Simon take turns to take toffees.
Charles takes 1, then Paul takes 2, then Simon takes 3,
then Charles takes 4, then Paul takes 5 and so on.
When the box does not contain enough toffees to follow this rule, the person whose turn it is takes all the remaining toffees. Paul took 25 toffees in total.

How many toffees were there in the box at the start?

A: 48 B: 50 C: 55 D: 56 E: 65

[*Italy*]

15 The square ABCD is divided into four identical grey rectangles, four identical white rectangles and one black square, as shown.
The side-length of the black square is 7 cm.
The side-length of the long sides of the white rectangles is 15 cm.
The side-length of the long sides of the grey rectangles is 29 cm.



What is the side-length of the square ABCD?

A: 33 cm B: 34 cm C: 35 cm D: 36 cm E: 37 cm

[*Mexico*]

16 A group of students has a box of apples. They want to divide the apples equally among themselves. They note that:
* if there were 80 more apples, every student would get 4 more apples.
* If there were 8 fewer students, every student would get 6 more apples.

How many apples are in the box?

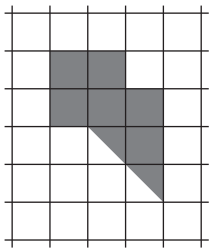
A: 240 B: 180 C: 160 D: 120 E: It can not be determined.

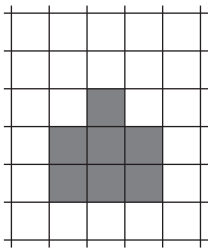
[*Iran*]

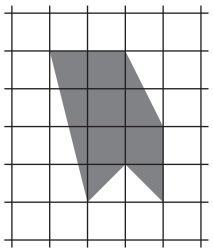
Five point problems

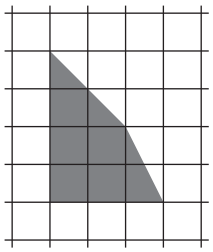
17 Four of the shaded regions below have the same area and one is different.

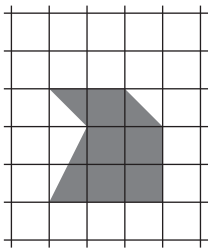
Which shaded region has a different area?

A 

B 

C 

D 

E 

[*Denmark*]

18 A detective is trying to determine the route the suspect took.
The suspect gives three different statements:
"I went from New York via Chicago to Omaha."
"I went from New York via Miami to Kansas City."
"I went from San Francisco via Miami to Omaha."
In each statement, exactly one of the places and its position is correct.

What route did the suspect take?

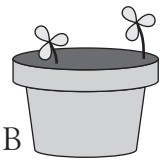
A: New York ⇢ Chicago ⇢ Omaha
B: San Francisco ⇢ Chicago ⇢ Kansas City
C: New York ⇢ Miami ⇢ Kansas City
D: San Francisco ⇢ Miami ⇢ Omaha
E: Chicago ⇢ San Francisco ⇢ Kansas City

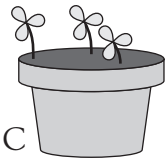
[*USA*]

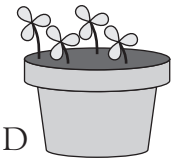
19 Five siblings have each planted flowers in a pot. The 5 pots are shown below.
In Jim's and Fredrik's pots there are 3 times as many flowers in total as there are in Zoe's pot. In Fredrik's and Carl's pots there are twice as many flowers in total as there are in René's pot.

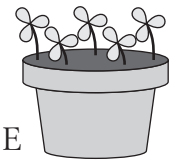
Which is Frederic's pot?

A 

B 

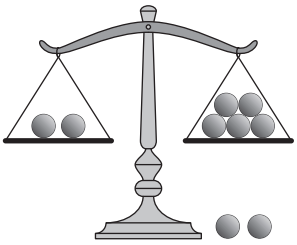
C 

D 

E 

[*Germany*]

20 Julia has nine balls with masses 1kg, 2kg and so on up to 9kg. She puts seven of the balls on a scale so that the scales balance. Two of the balls are placed on the left plate and five are placed on the right plate. Two balls are not used.



What is the smallest possible total of the masses of the two balls that are not used?

A: 5kg B: 7kg C: 9kg D: 11kg E: 17kg

[*Brazil*]

21 Filip has a combination lock with 4 digits. He has forgotten the combination, but he does remember that the digits are all odd numbers and they either increase or decrease from left to right.

What is the largest number of combinations he might need to try to open his lock?

A: 6 B: 8 C: 10 D: 12 E: 14

[*Germany*]

22 Renate removes some numbers from the table shown, so that the sum of the remaining numbers in each row and each column is 15.

What is the sum of the numbers she removed?

A: 31 B: 29 C: 27

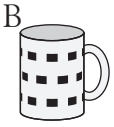
D: 25 E: 24

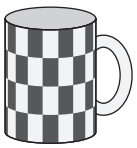
4	7	7	4
6	4	4	5
5	5	4	6
5	8	7	4

[*China*]

23 The five cups belong to Leonard, Rami, Annie, Petra and Sheldon.
All the cups' handles are either black or white.
Leonard's cup and Rami's cup are the same size but their handles are different colours.
Annie's cup and Petra's cup are different sizes but their handles are the same colour.

Which cup belongs to Sheldon?

A  B  C 

D  E 

[*Germany*]

24 Ali wrote out all the numbers from 1 to 7000 in order, without separating them with spaces, commas or any other symbols.

How many times does the digit sequence 2026 appear in the resulting list of numbers?

A: 1 B: 2 C: 3 D: 4 E: 5