Till läraren

Välkommen till Kängurutävlingen – Matematikens hopp 2025
Ecolier

- Tävlingen genomförs under perioden 20 – 28 mars. *Uppgifterna får inte användas tidigare.*
- Du får tillgång till facit och ett kalkylblad, lösenord finns på mailet du fått. 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:
ulrica.dahlberg@ncm.gu.se

Svarsblankett

Markera ditt svar i rätt ruta

Uppgift	A	B	C	D	E	Poäng
1						
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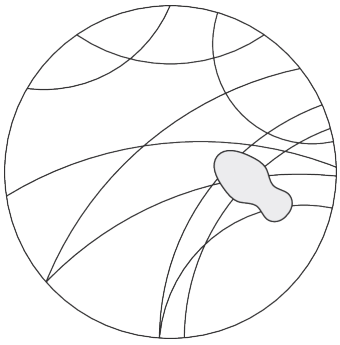
Namn:.....

Klass:.....

Kängurutävlingen – Matematikens hopp 2025
Ecolier

Three points problems

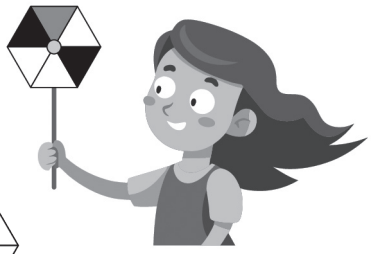
1. Alex walked on a floor where there was a pattern.
What does the pattern on the floor look like under Alex's feet?

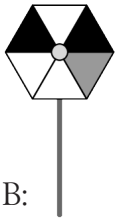
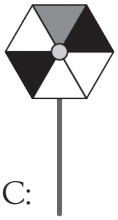
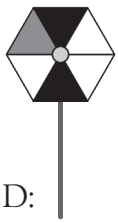


A:  B:  C:  D:  E: 

[*Iran*]

2. Larissa is playing with a toy that spins around.
Which toy is Larissa's?



A:  B:  C:  D:  E: 

[*Germany*]

3. The four numbers 2, 0, 2, 5 should be in the four squares.

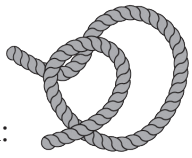
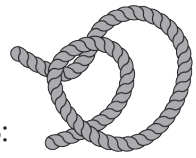
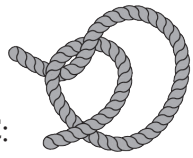
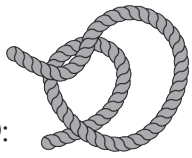
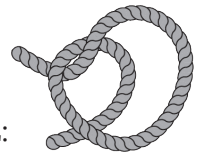
$$\square + \square - \square + \square$$

In what order should the numbers be placed if the result is to be as large as possible?

A: 0, 2, 2, 5 B: 0, 5, 2, 2 C: 2, 5, 2, 0 D: 5, 0, 2, 2 E: 5, 2, 0, 2

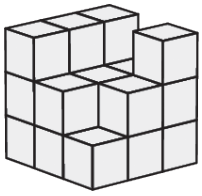
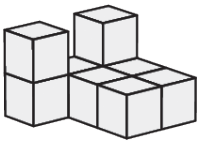
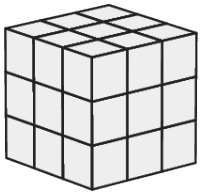
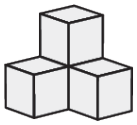
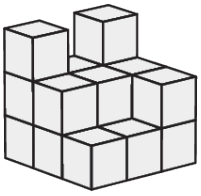
[*Germany*]

4. Which rope will form a knot if you pull on the ends?

A:  B:  C:  D:  E: 

5. Mia builds a large cube from small cubes.
The large cube is three small cubes high, three small cubes wide and three small cubes deep (3 x 3 x 3).
While Mia builds, mom takes five pictures of how the building grows.

Which of these five pictures is the fourth picture that mom takes?

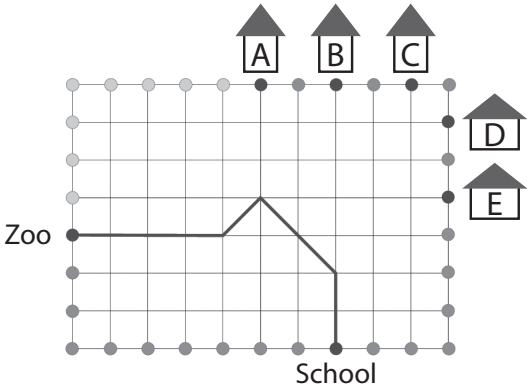
A:  B:  C:  D:  E: 

[*Germany*]

6. Kjell Kangaroo jumps from school to the zoo like this: ↑2, ↖2, ↙1, ←4.

Then he jumps home from the zoo like this: →3, ↗2, ↑2.

Which house will he come to then?

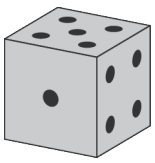
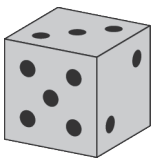
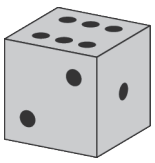
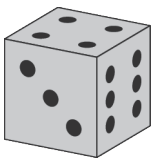
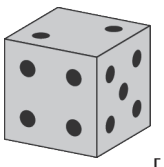


A: A B: B C: C D: D E: E

[*Slovakia*]

7. On a regular dice, the sum of the dots on the two sides that are opposite each other is always 7.

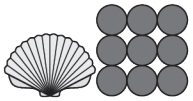
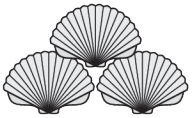
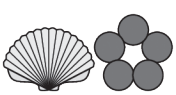
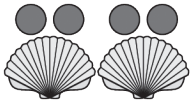
Which of the dice could be a regular dice?

A:  B:  C:  D:  E: 

[*France*]

8. Nils and Ellen are playing business with shells and pearls.
Each shell is worth 6 kr and each pearl is worth 1 kr.

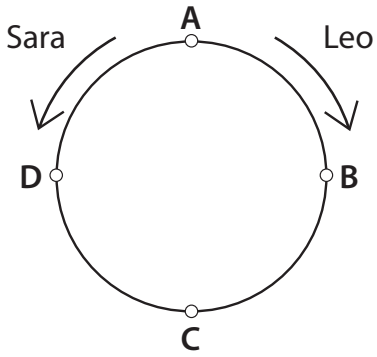
Which of these is worth 16 kr?

A:  B:  C:  D:  E: 

[*Germany*]

Four points problems

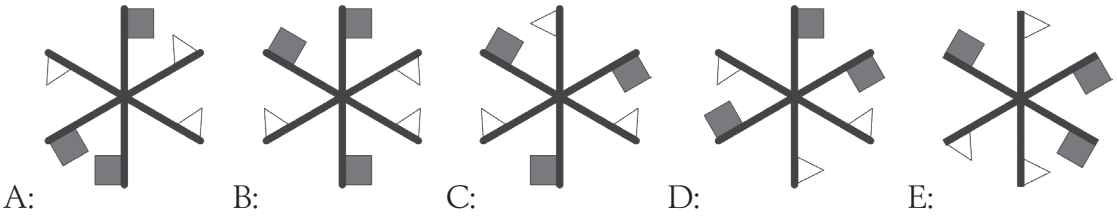
9. Sara and Leo are running around a circular playground.
Sara runs in one direction and Leo runs in the other.
They start at A at the same time.
They meet for the first time at B, the second time at C, and the third time at D.
Finally, they meet at point A.



How many laps did Sara run?

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

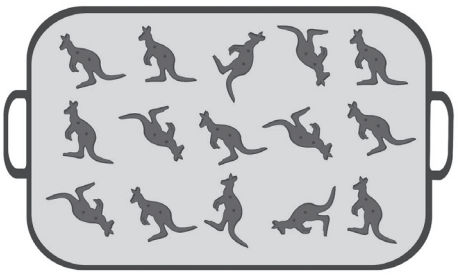
10: What kind of pinwheel can Johan build with his three sticks?



[*Poland*]

11. Anna, Bonnie and Caspar have kangaroo biscuits on their plates:

There are also biscuits on a tray, there are 15 of them. The children should divide the biscuits on the tray so that everyone will then have the same number of biscuits on their plates.



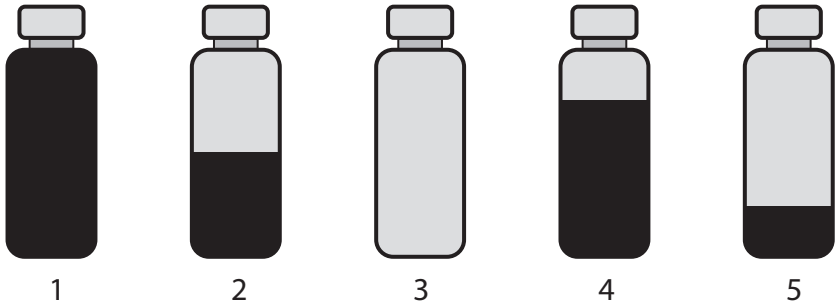
How many of the biscuits on the tray should Anna get?

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

[*Germany*]

12. Five friends each have the same bottle with the same amount of drink in it to take on an outing.
After the outing, Bea had drunk all her drink.
She had drunk as much as Anders and Carl had drunk together.
David had not drunk any drink at all.

Which bottle is Edvard's?



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

[*Slovenia*]

13. Renée feeds six sheep.
Together they get 210 grams of vitamins to stay healthy.
The smallest sheep gets twice as many vitamins as each of the other sheep.

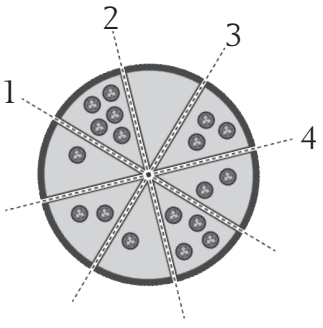
How much vitamins does the smallest sheep get?

A: 55 gram B: 60 gram C: 70 gram D: 75 gram E: 80 gram

[*Germany*]

14. Tom wants to cut the pizza into two pieces.
He wants the same number of tomatoes on each piece.
It is possible to do this in two different ways.

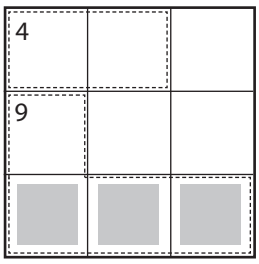
What lines can he cut along?



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

[*Norway*]

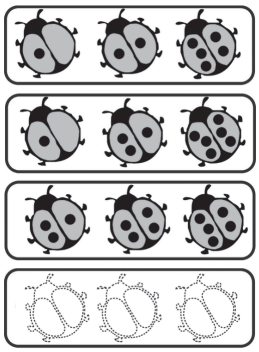
15: In each row there should be 1 in a box, 2 in a box and 3 in a box. In each column there should be 1 in a box, 2 in a box and 3 in a box. The same number can only appear once in each row and in each column. The small numbers in the picture tell you what the sum of the numbers in the circled areas should be.



What should the bottom row look like?

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

16. Six ladybugs have either 1, 2, 3, 4, 5 or 6 dots.
Marta took 4 photos with three ladybugs in each photo.
All ladybugs are in the photo the same number of times.
In the fourth photo you only see the outlines of three ladybugs.



How many dots do the three ladybugs in the fourth picture have together?

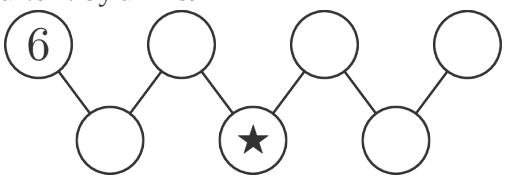
A: 9 B: 10 C: 11 D: 12 E: 23

[*Greece*]

Five points problems

17. The circles should be marked 1, 2, 3, 4, 5, 6 and 7. There should be one number in each circle. The numbers in the circles in the bottom row should be the sum of the numbers in the two circles in the top row that are connected to it by a line.

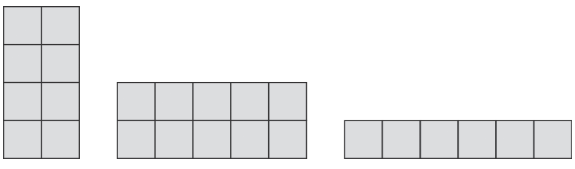
What number should be in the circle with the star ★?



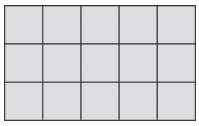
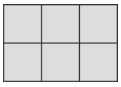
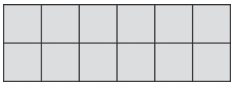
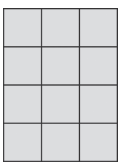
A: 2 B: 3 C: 4 D: 5 E: 7

[*Kina*]

18. Bob is going to build a square out of four pieces.
You can see three of the pieces here:



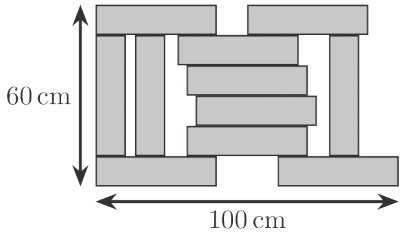
What is the fourth piece?

A:  B:  C:  D:  E: 

[*Vietnam*]

19. Bygget är gjort av 11 likadana brickor.
Hela bygget är 100 cm åt ena hållet och
60 cm åt det andra.

What are the dimensions of each tray?

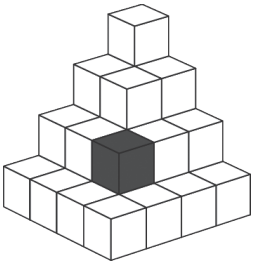


A: 8 cm, 40 cm B: 10 cm, 40 cm C: 12 cm, 40 cm

D: 8 cm, 44 cm E: 10 cm, 50 cm

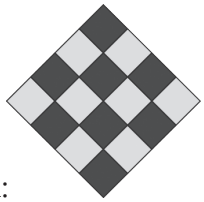
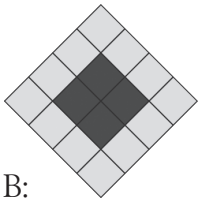
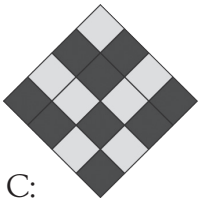
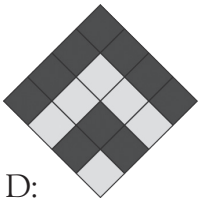
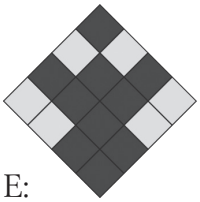
[*Greece*]

20. Leonard is going to build a staircase with gray and black cubes.
In the picture you can see what shape the staircase should have.
You can also see where *one* of the black cubes should be.



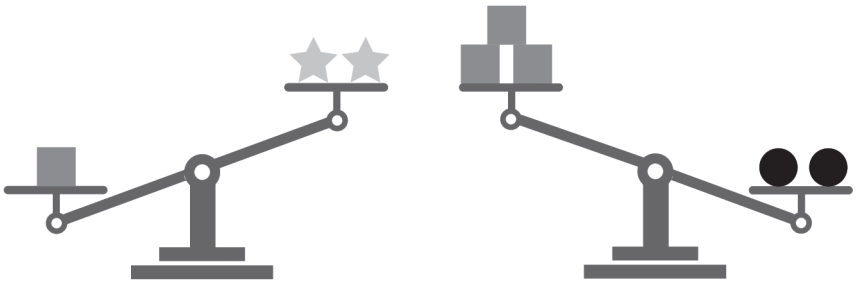
He must build according to two rules:
– two cubes that are next to each other must have different colors
– two cubes that are on top of each other must have different colors.

What will Leonard's staircase look like from above?

A: 
B: 
C: 
D: 
E: 

[*Poland*]

21. Per weighs three different toys: cubes, marbles and stars.



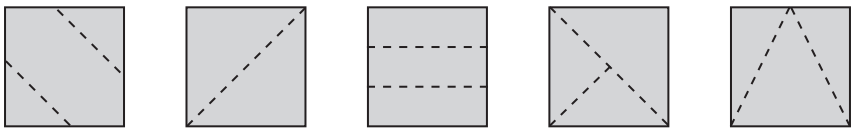
Different toys weigh differently, but those that are the same weigh the same.
A toy can weigh 1 kg, 2 kg, 3 kg, 4 kg or 5 kg.

How much does a cube weigh?

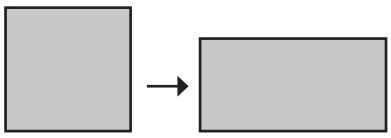
A: 1 kg B: 2 kg C: 3 kg D: 4 kg E: 5 kg

[*China*]

22. Dashed lines are drawn on five squares of paper.



If you cut along the lines, you can assemble the pieces in one of the squares into a rectangle that has the shape you see in the picture below.
The pieces must not be on top of each other.



Which square is it?

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

23. The image shows a month in a calendar, but without a date.

Mon	Tues	Wed	Thurs	Fri	Sat	Sun

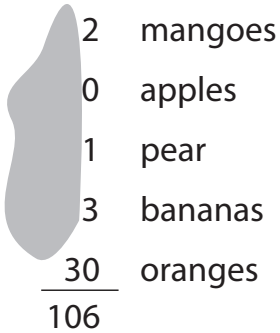
The sum of the dates in the two gray boxes is 29.

What day of the week is the first day of this month?

A: Monday B: Tuesday C: Wednesday D: Thursday E: Sunday

[*Greece*]

24. The fruit seller has five different kinds of fruit.
He has made a list of how much fruit he has.
In total, he has 106 fruits.
Unfortunately, some numbers have been overdrawn, but he remembers that:
– he has the same number of two kinds of fruit
– he has twice as many of one kind of fruit as of another kind
– he has more than 10 of all kinds.



How many bananas does he have?

A: 13 B: 23 C: 43 D: 53 E: 63

[*Greece*]