Matematikksenteret
Nasjonalt senter for matematikk i opplæringen

2026

KENGURUKONKURRANSEN

Problems in English

Benjamin

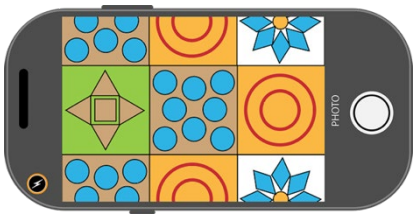
(6.–8. trinn)

Kengurukonkurransen

NTNU

3 points

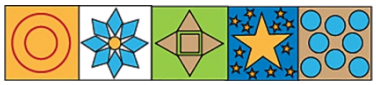
1. A floor is made of 5 different tiles.
The tiles are laid in a repeating pattern.
Eva takes a picture of the floor with her phone, as shown.

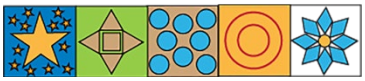


What is the repeating pattern of the 5 tiles?

(A) 

(B) 

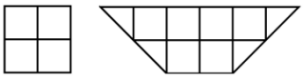
(C) 

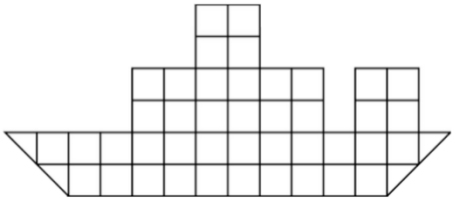
(D) 

(E) 

---

2. Amir has two types of small paper pieces, as shown.





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

(A) 4 (B) 5 (C) 6 (D) 7 (E) 8

---

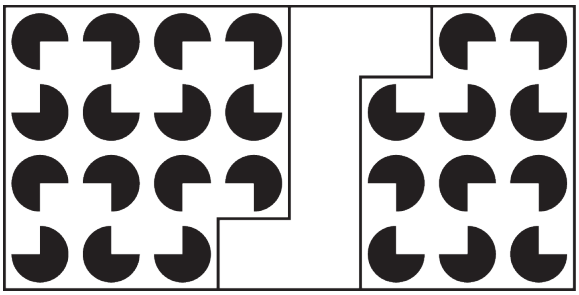
3. A standard dice has six faces numbered from 1 to 6. The sum of the numbers on opposite faces is always 7. The numbers on three faces that share a common vertex have a sum of 14.

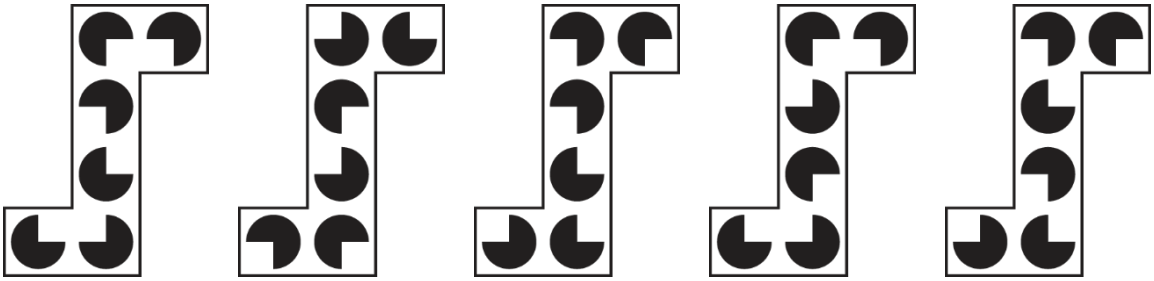
What are the numbers on the other three faces?

(A) 1, 2 and 4 (B) 3, 5 and 6 (C) 2, 5 and 6 (D) 1, 2 and 6 (E) 2, 3 and 4

Matematikksenteret
Nasjonalt senter for matematikk i opplæringen

4. Which of the pieces shown below is needed to complete the puzzle?

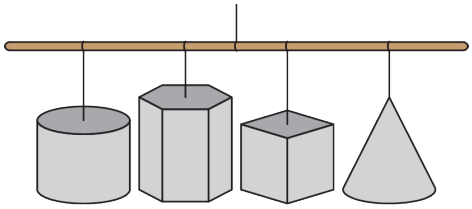




(A) (B) (C) (D) (E)

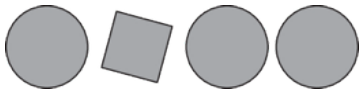
---

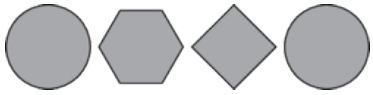
5. There are four solids hanging in the classroom, as shown in the picture.

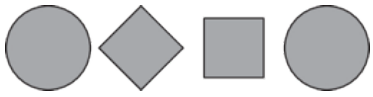


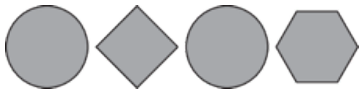
Betty is looking at them from below.

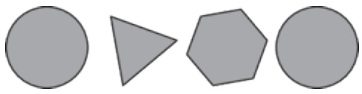
What can she see?

(A) 

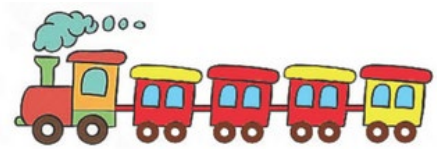
(B) 

(C) 

(D) 

(E) 

6. The figure shows the first 4 of 18 train wagons.
Their colours follow a repeating pattern: red, red, red, yellow.
All the wagons have roofs.
The roof colours alternate in a regular pattern: yellow, red, yellow, red ...



How many red wagons have red roofs?

(A) 6 (B) 5 (C) 4 (D) 3 (E) 2

---

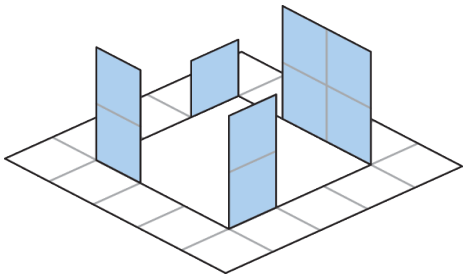
7. Max eats $\frac{1}{4}$ of the pizza and Grace eats $\frac{1}{2}$ of what is left.

How many slices remain?

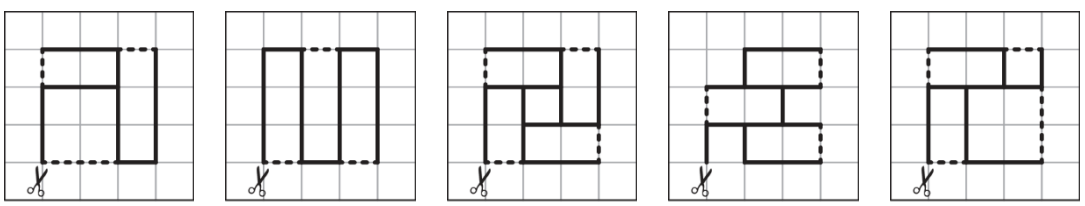
(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

---

8. On a template, dashed lines show where to fold and solid lines show where to cut.



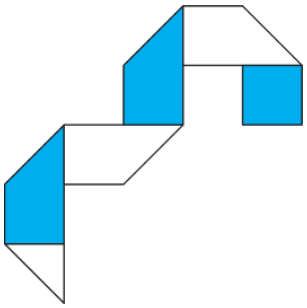
Which of the templates below did Ada use to create the figure on the right?



(A) (B) (C) (D) (E)

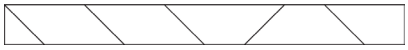
4 points

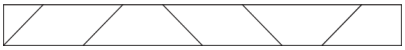
9. Lukas has a rectangular strip of paper.
One side is white, the other side is dark.
On the white side he drew 5 lines and folded the strip along them, as shown in the picture.

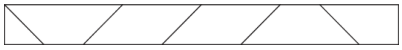


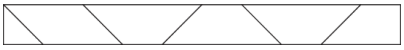
What did the strip look like before folding?

(A) 

(B) 

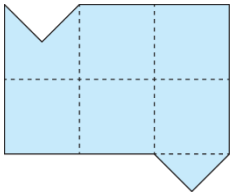
(C) 

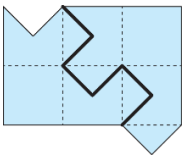
(D) 

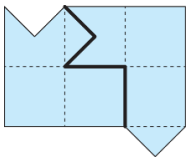
(E) 

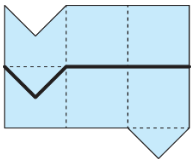
---

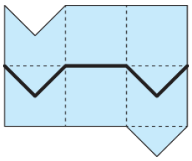
10. Which option shows a cut that divides the figure shown into two identical parts?
The parts may be flipped.

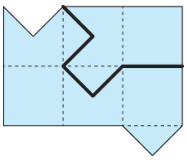


(A) 

(B) 

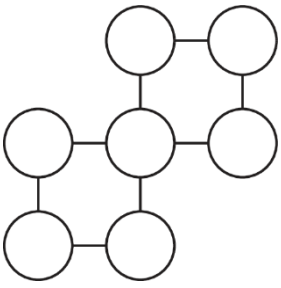
(C) 

(D) 

(E) 

---

11. The numbers 0, 1, 2, 3, 4, 5 and 6 are written in the circles shown on the right. Each number is placed in a different circle, 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

12. 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, as shown:

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

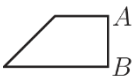
Irma then poked a needle through the whole strip where the number 1 was written, unfolded the strip and added up all numbers in pierced cells.

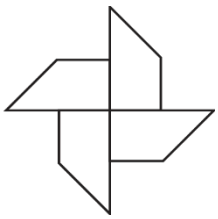
What answer did she get?

(A) 64 (B) 68 (C) 99 (D) 128 (E) 136

---

13. The trapezium on the left has a perimeter of 22 cm.
Four of these trapezia are joined together, without overlapping, to form the pinwheel design shown on the right.
The perimeter of the pinwheel is 56 cm.





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

(A) 8 cm (B) 6 cm (C) 5 cm (D) 4 cm (E) 3 cm

---

14. There are some toffees in a box. Charles, Paul and Simon take turns to take some toffees from the box. 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 initially?

(A) 48 (B) 50 (C) 55 (D) 56 (E) 65

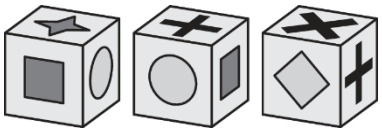
15. The numbers 9, 11, 13, 15, 17, and 19 are written on a board. In each step, you may erase any two numbers and replace them with a new number equal to one less than their sum.
You repeat this process until only one number remains on the board.

What will that final number be?

(A) 66 (B) 75 (C) 79 (D) 80 (E) 83

---

16. On the right, we can see three views of the same cube.



Which of the following faces are opposite?

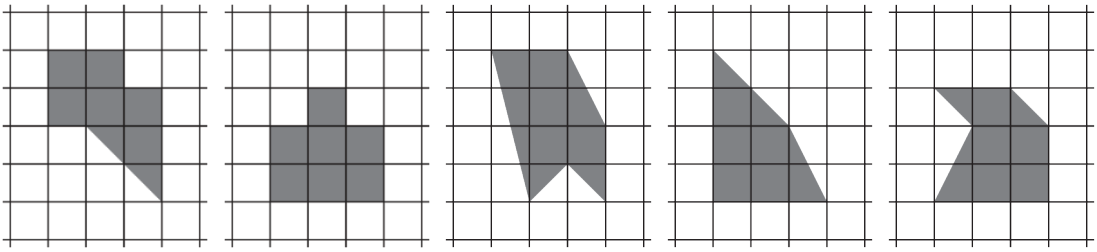
(A) (B) (C) (D) (E)

---

5 points

17. The areas of four of the shaded regions shown are the same.

Which shaded region has a different area?



(A) (B) (C) (D) (E)

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 in that statement is correct.

What is the route the suspect took?

(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

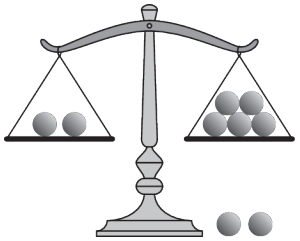
---

19. Five siblings have each planted flowers in a pot on their balcony.
Now the first flowers are starting to sprout. The 5 pots are shown below.
In Jim's and Frederic's pots there are 3 times as many flowers in total as there are in Zoe's pot. In Frederic's and Carl's pots there are twice as many flowers in total as there are in Rene's pot.

Which is Frederic's pot?

(A) (B) (C) (D) (E)

20. Julia has 9 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, as shown.
Two of the balls are placed on the left plate and five of the balls are placed on the right plate.



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

(A) 5 kg (B) 7 kg (C) 9 kg (D) 11 kg (E) 17 kg

---

21. Filip has a combination lock with 4 digits ranging from 0 to 9. He has forgotten the combination, but he does remember that the digits are all odd and they either increase or decrease from left to right.

What is the largest number of combinations he would need to try to be sure he can open his lock?

(A) 6 (B) 8 (C) 10 (D) 12 (E) 14

---

22. Renate removed several numbers from the table below so that the sum of the remaining numbers in each row and each column is 15?

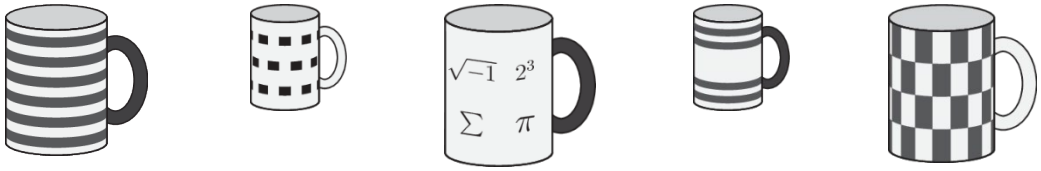
4	7	7	4
6	4	4	5
5	5	4	6
5	8	7	4

What is the sum of the numbers she removed?

(A) 31 (B) 29 (C) 27 (D) 25 (E) 24

23. The five cups shown belong to Leonard, Rajesh, Amy, Penny and Sheldon, in some order. All the cups' handles are either black or white. Leonard's cup and Rajesh's cup are the same size, but their handles are different colours. Amy's cup and Penny's cup are different sizes, but their handles are the same colour.

Which cup belongs to Sheldon?



(A) (B) (C) (D) (E)

---

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