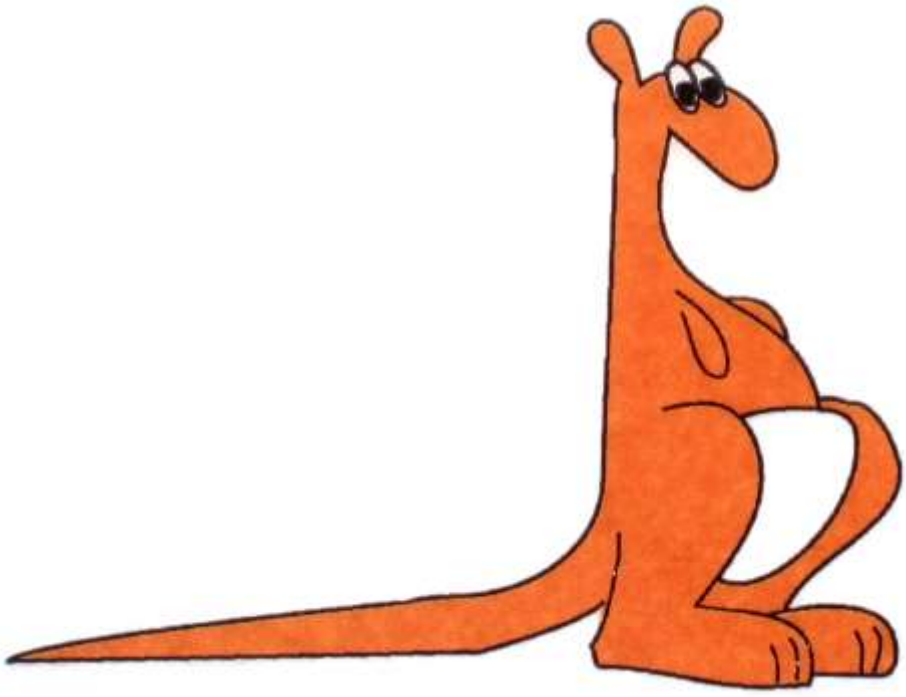
Kengurukonkurransen 2023

«Et sprang inn i matematikken»

Ecolier (4.–5. trinn)

Problems in English



MATEMATIKKSENTERET
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3 points

1. Akira lits 5 identical candles all at the same time.
They stopped burning at different times and now look as shown in the picture.

Which candle stopped burning first?

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

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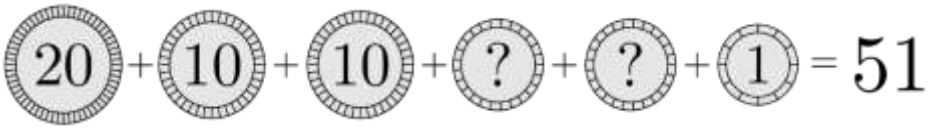
2. The 2 kangaroo coins with the question mark on have the same value.
What is this value?



(A) 1 (B) 2 (C) 5 (D) 10 (E) 20

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3. A grey circle with 2 large holes in it is put on top of a clock-face, as shown.
The grey circle is turned around its center.

Which 2 numbers is it possible to see at the same time?

(A) 4 and 9 (B) 5 and 9 (C) 5 and 10 (D) 6 and 9 (E) 7 and 12

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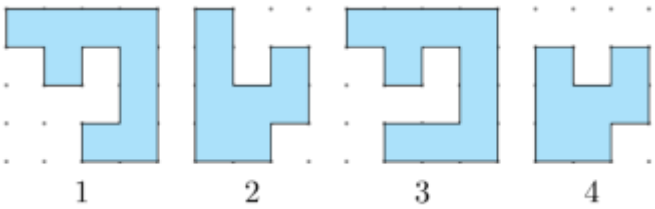
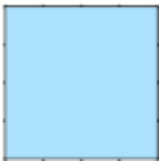
4. Alice has these puzzle pieces:



Which 2 pieces can she put together to form this square?



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

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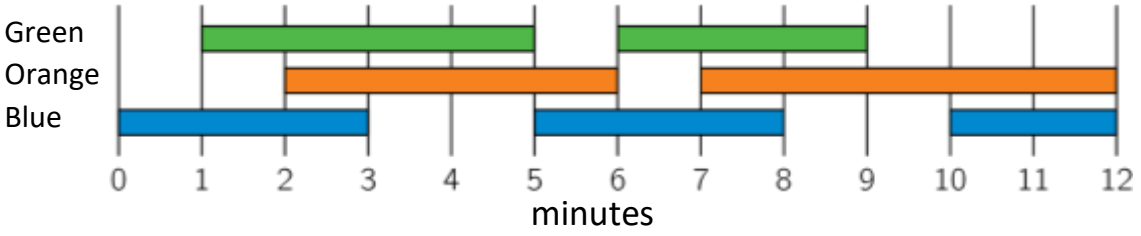
5. A light engineer in the theatre turns the lights on and off. She uses the plan shown.



How long in total are exactly 2 of the lights on at the same time?

(A) 2 minutes (B) 6 minutes (C) 8 minutes (D) 9 minutes (E) 10 minutes

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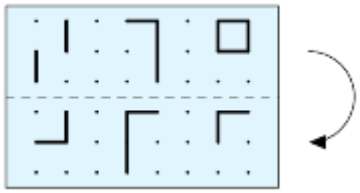
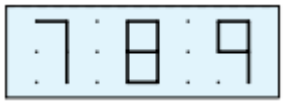
6. Kristoffer folds the transparent paper along the dashed line.

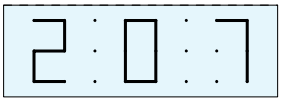


What can he then see?

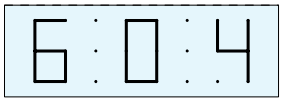
(A)



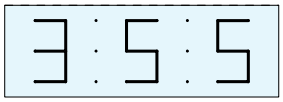
(B)



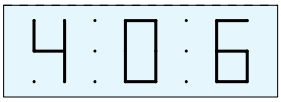
(C)



(D)



(E)



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7. There are 19 students standing in a line. The teacher counts them as 1, 2, 1, 2, 1, 2 … Those students belonging to number 2 were asked to move out of the line.

How many students are left in the line?

(A) 9 (B) 10 (C) 11 (D) 12 (E) 13

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8. Danny glued the 2 pieces of paper

on top of the black circle on the right.

What can he not obtain?

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

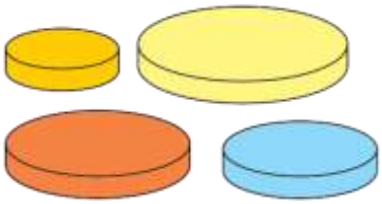
4 points

9. **Which two numbers must swap places if we want to write = instead of ≠ between the expressions?**

1 + 2 + 4 + 8 ≠ 3 + 5 + 8 + 9

(A) 2 and 8 (B) 4 and 9 (C) 4 and 8 (D) 8 and 3 (E) 1 and 5

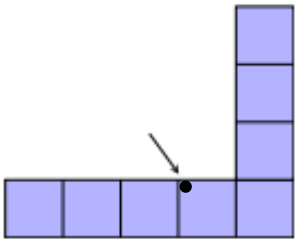
10. Anna has 4 discs of different sizes.
She wants to build a tower of 3 discs so that every disc is smaller than the disc below it.



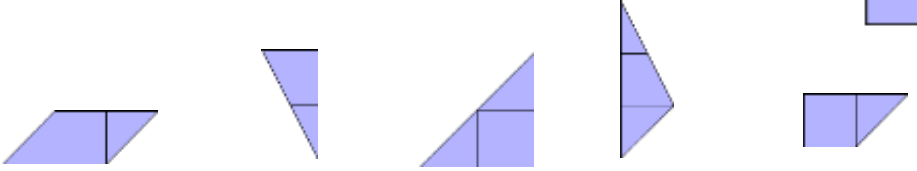
How many different towers can Anna make?

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

11. The shape on the right is covered with the 5 pieces below.



Which piece will cover the dot?



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

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12. There are six weights of 1, 2, 3, 4, 5 and 6 kg. Rossitza puts five of them on the scales and puts one weight aside. The scales balance.

Which weight did she put aside?

(A) 1 kg (B) 2 kg (C) 3 kg (D) 4 kg (E) can't be sure

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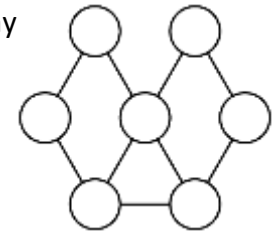
13. Tobias wants to paint the circles in the picture. He wants to paint any 2 circles connected with a line in different colors.



What is the smallest number of colors he needs?

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

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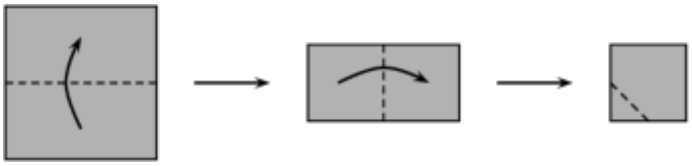
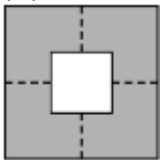
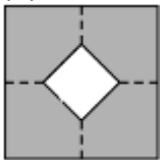
14. Rebekka folds a square piece of paper twice. Then she cuts off one corner.

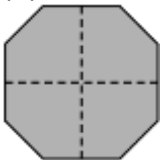


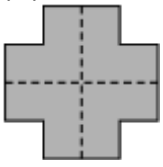
Next, she unfolds the paper.

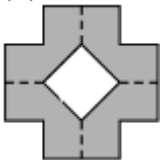
What does the paper look like once unfolded?

(A)


(B)


(C)


(D)


(E)


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15. There are 8 cars waiting in a queue for the ferry. Every car contains either 2 or 3 people. There are 19 people in total waiting for the ferry.

How many cars contain exactly 2 people?

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

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16. The Metro line has 6 stations, A, B, C, D, E, and F. The train stops at every station. When it reaches one of the two end stations, it changes its direction. The train driver started driving at station B and her first stop was station C.

Which station will be her 96th stop?

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

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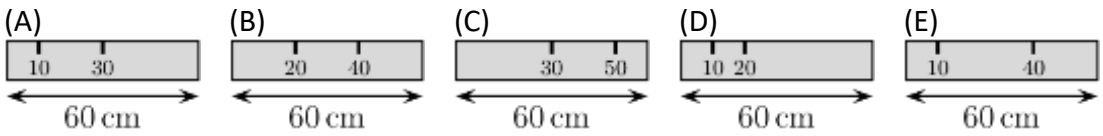
5 points

17. Alex has a 60 cm ruler. Unfortunately, some of the markings have faded away. He is able to measure any of the lengths 10, 20, 30, 40, 50 and 60 cm using his ruler only once.

Which is Alex's ruler?



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18. 6 girls and 2 boys are standing in a line.
Amongst any 3 consecutively numbered children, exactly 1 is a boy.

Which numbered child is a boy?

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

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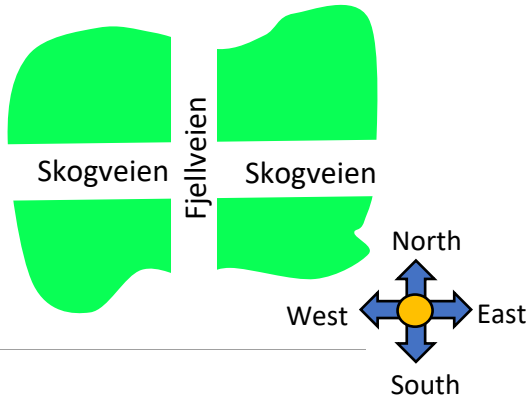
19. There are 7 houses north of Skogveien, 8 houses east of Fjellveien and 5 houses south of Skogveien.

How many houses are west of Fjellveien?



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

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20. Hermione, Harry og Ron always walk into the common room one at the time.
Hermione is never first, Harry is never second, and Ron is never third.

In how many different orders could they walk in?

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

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21. There are five clocks on the wall.
It is known that one clock is an hour fast, one clock is an hour slow, one clock shows the correct time and two clocks have stopped.

Which clock shows the correct time?

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22. Adam and Brenda have 9 marbles each.
Together, they have 8 red and 10 blue marbles.
Brenda has twice as many blue marbles as red marbles.

How many blue marbles does Adam have?

(A) 3 (B) 4 (C) 5 (D) 6 (E) 0

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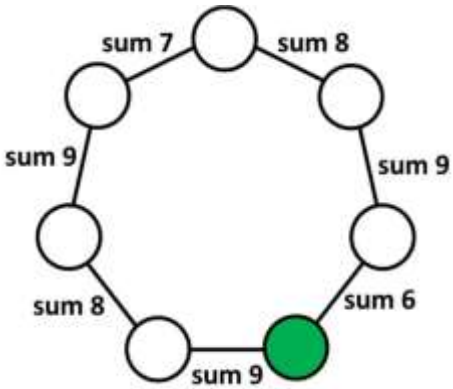
23. Teacher Olena wants to write the numbers 1 to 7 in the circles.
Inside each circle she writes 1 number.
She wants the sum of the numbers in 2 circles that are next to each other to be as shown.



What number must she write inside the shaded circle?

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

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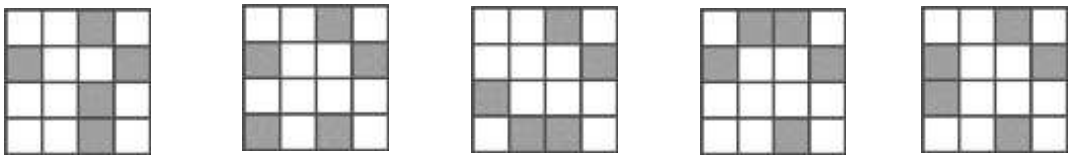
24. Maria has shaded exactly 5 cells in a 4 × 4 grid. She challenges 5 of her friends to guess which cells she has shaded. The grids they have drawn are shown below.

Maria looks at them and says: “One of you is right and each of the rest of you has four cells correct.”

Which is the correct answer?



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

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Answer sheet for the student

Name: ……..

Mark your answer in the schema below.

Problem	A	B	C	D	E	Points
1						
2						
3						
4						
5						
6						
7						
8						
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11						
12						
13						
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23						
24						
					Sum	

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