Kangourou Sans Frontières

Math Kangaroo USA 2025

International Competition in Mathematics
Thursday, March 20, 2025

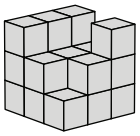
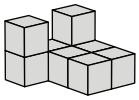
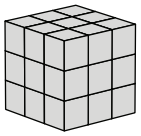
Grades 3 and 4

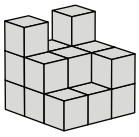
Math Kangaroo USA

You have 75 minutes to complete the test. ⋆ Calculators are not allowed. ⋆ Mark your answers on the answer sheet.

Problems 3 points each

1. Mia is connecting small cubes, adding one at a time, to build a $3 \times 3 \times 3$ cube. She took pictures at 5 different moments, giving the five pictures shown below. Which one is Mia's fourth picture?

(**A**)  (**B**)  (**C**) 

(**D**)  (**E**) 

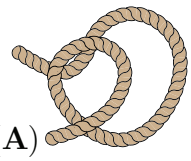
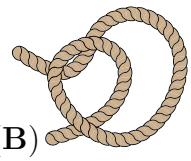
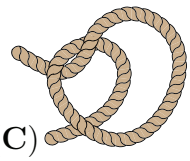
2. Arya writes the four digits 2, 0, 2, 5 in the four boxes.

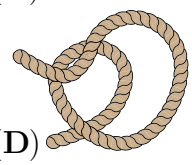
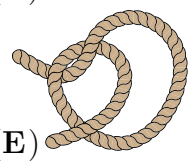
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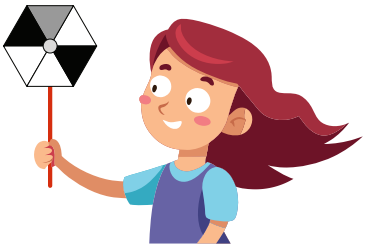
Which order would give her the largest result?

(**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

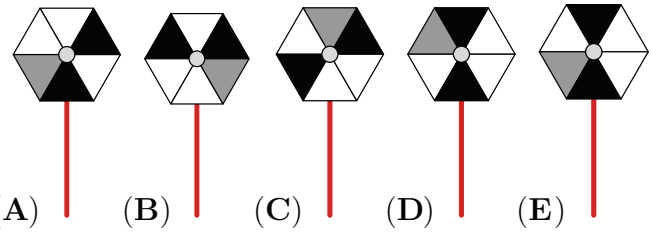
3. Which rope ties into a knot when the ends are pulled?

(**A**)  (**B**)  (**C**) 

(**D**)  (**E**) 



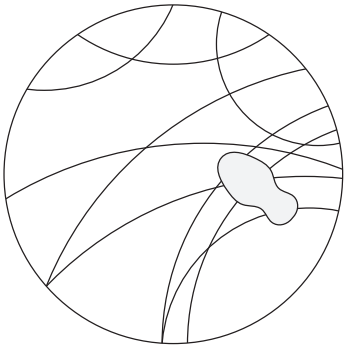
4. Emma spins her pinwheel.
Which of the pinwheels below is hers?


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

5. On a regular die, the total number of dots on two opposite faces is always 7. Which one of the dice shown below can be a regular die?

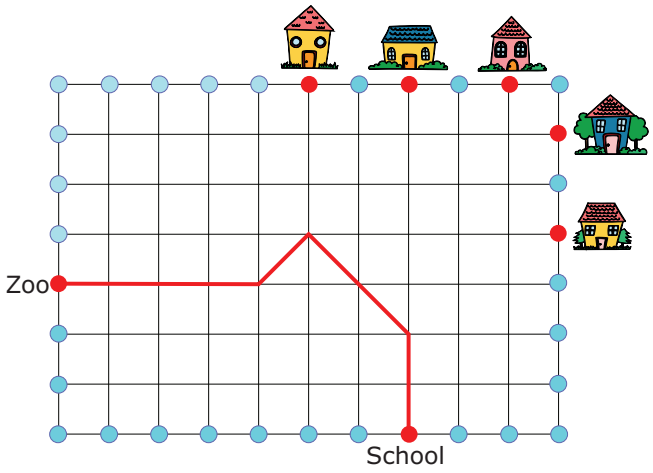
(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

6. Alex stepped on some tracks on the ground.
What pattern is underneath her shoe?



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

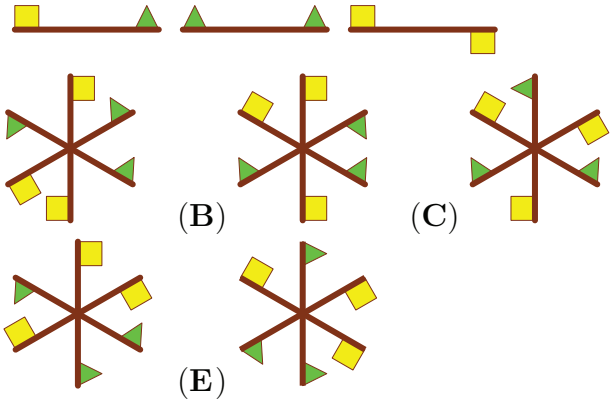
7. Kenny the Kangaroo jumps from the School to the Zoo as follows: ↑ 2, ↖ 2, ↙ 1, ← 4, as shown in the picture.



Then, he jumps from the Zoo as follows: → 3, ↗ 2, ↑ 2. Which house will he get to?

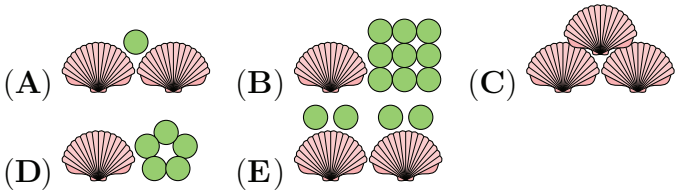
(A) (B) (C) (D) (E)

8. Which pinwheel can Jorge build with these 3 rods?



Problems 4 points each

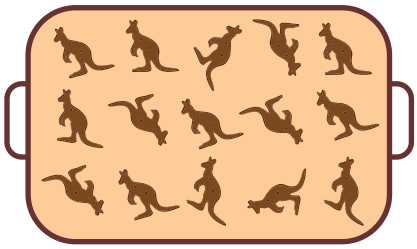
9. James and his little sister pay with shells and marbles in their playshop. Each shell has a value of 6 and each marble has a value of 1. Which of the following has a total value of 16?



10. Anna, Bonnie, and Charlie have some kangaroo cookies on their plates, as shown.



They then share the remaining 15 cookies on the tray so that everyone now has the same number of cookies on their plates.



How many cookies from the tray does Anna get?

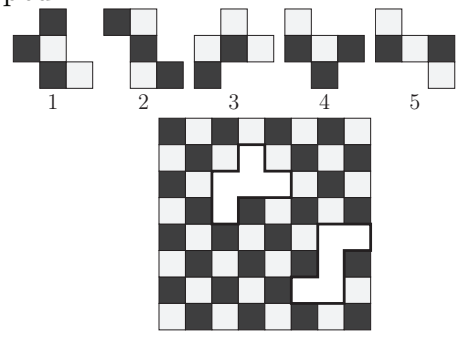
(A) 4 (B) 5 (C) 6 (D) 7 (E) 8

11. In the morning, 5 friends had identical fully-charged mobile phones. By the evening, Bob had spoken on the phone as much as Ann and Cristina together. Bob ran out of power. David had not used his phone at all. Which phone belonged to Edward?



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

12. Which two of the pieces shown complete the chessboard? The pieces can be rotated but cannot be flipped.



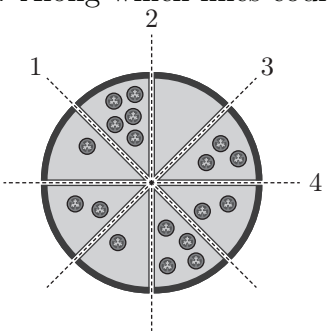
(A) pieces 1 and 2 (B) pieces 1 and 5
(C) pieces 3 and 4 (D) pieces 3 and 5
(E) pieces 4 and 5

13. In the petting zoo, René feeds 6 sheep. She gives them a total of 210 grams of dry food for lunch. She gives the smallest sheep twice as much food as she gives to each of the others. How much does the smallest sheep get?



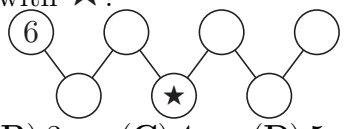
(**A**) 55 grams (**B**) 60 grams (**C**) 70 grams
(**D**) 75 grams (**E**) 80 grams

14. Tom wants to divide a pizza into 2 halves. He also wants to have the same number of tomatoes on each half. It is possible for him to do this with two different cuts. Along which lines could he cut?



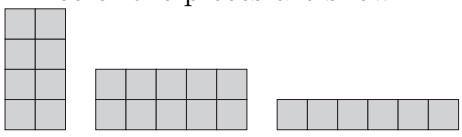
(**A**) 1 and 3 (**B**) 1 and 4 (**C**) 2 and 3
(**D**) 2 and 4 (**E**) 3 and 4

15. Maria fills the circles with the numbers 1, 2, 3, 4, 5, 6, and 7. The number in each of the lower circles is equal to the sum of the two numbers in the connected circles above it. What number goes in the circle with ★?

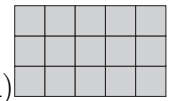
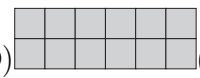
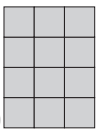


(**A**) 2 (**B**) 3 (**C**) 4 (**D**) 5 (**E**) 7

16. Bob makes a square from 4 rectangular pieces. Three of the pieces are shown.

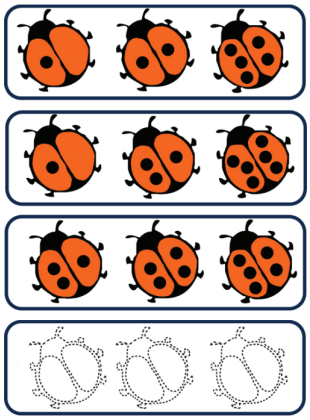


Which of the following is the fourth piece he uses?

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

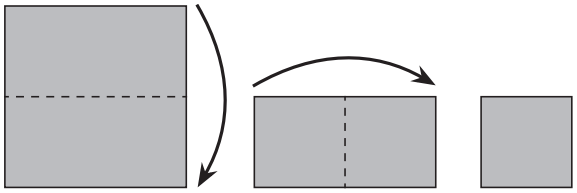
Problems 5 points each

17. Six ladybugs have 1, 2, 3, 4, 5, or 6 spots each. Marta took four photos of them in groups of three. Each ladybug appeared the same number of times in the photos. Three of the photos, along with the outline of the fourth photo, are shown here. How many spots do the three ladybugs in Marta's fourth photo have in total?

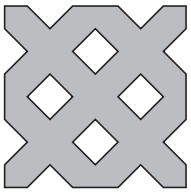


(**A**) 9 (**B**) 10 (**C**) 11 (**D**) 12 (**E**) 23

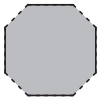
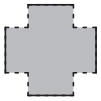
18. Nela folds a paper square in half and then in half again, as shown.



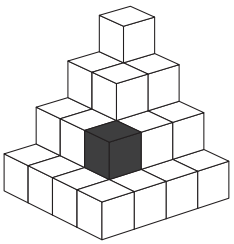
Next she cuts pieces out of the folded paper. After unfolding she sees a paper snowflake.

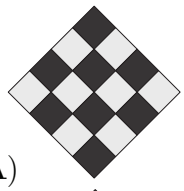
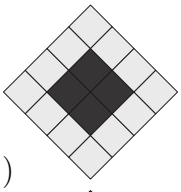
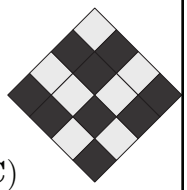
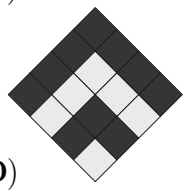
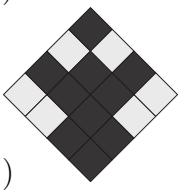


How did she cut the folded piece of paper?

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

19. Zoe built a pyramid using black and gray cubes. She arranged each cube so that each face does not touch the face of another cube with the same color. One of the black cubes is shown in the figure. What does Zoe's pyramid look like from above?



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

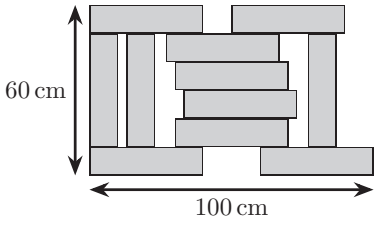
20. The picture shows the page for one month of a calendar without any of the dates.

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			■			
		■				

The total of the dates for the 2 shaded days is 29. On what day of the week does the first day of the month fall?

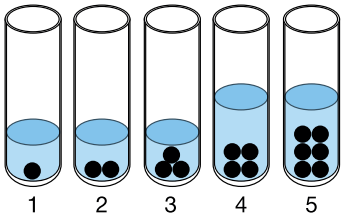
(A) Monday (B) Tuesday (C) Wednesday
(D) Thursday (E) Sunday

21. The construction uses 11 identical bricks. The construction has a length of 100 cm and a width of 60 cm. What is the size of each brick?



(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

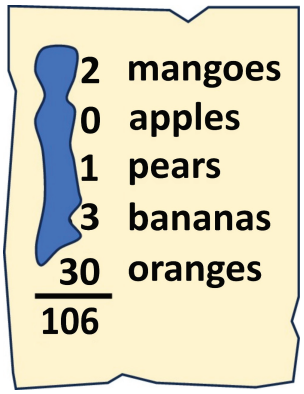
22. Identical balls have been placed in 5 identical test tubes as shown. Then water is added to each of these test tubes.



The water level in test tubes 1, 2, and 3 is the same. The water level in test tubes 4 and 5 is also the same and twice as high as in the first 3 test tubes. Then, all the balls are removed. Which test tube has the least water?

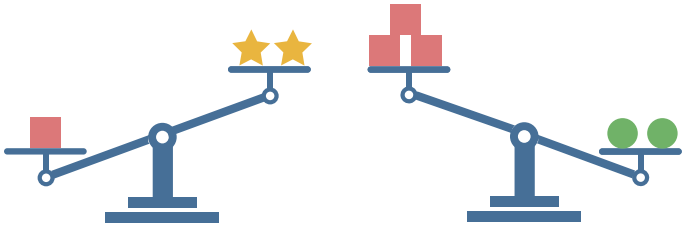
(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

23. Aanya wrote down the number of pieces of different fruit that she has. Unfortunately, some digits have been covered by paint. In total, she has 106 pieces of fruit. The number of pieces of two of the types of fruit are equal. She has twice as many of one type of fruit as she does of one other type. She has more than 10 pieces of each type of fruit. How many bananas does she have?



(A) 13 (B) 23 (C) 43 (D) 53 (E) 63

24. A pair of scales is used to weigh 3 different objects, and the results are shown below.



Each type of object has a different mass. The masses can be 1, 2, 3, 4, or 5 kg. What is the mass of one ■ in kilograms?

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