wizSMART 2012

W4 KANGOEROE WereldWijde WiskundeWedstrijd

www.w4kangoeroe.nl

Good luck and most of all have fun.

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- calculator not allowed
- you may use 50 minutes
- scrap paper is allowed
- results and awards at school mid-May
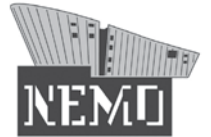- 20th March the answers will be on the website
- 15th April the explanations will be on the website

wizSMART
7 & 8 primary school and 1 & 2 vmbo,
vmbo 3 & 4 basisberoepsgerichte leerweg
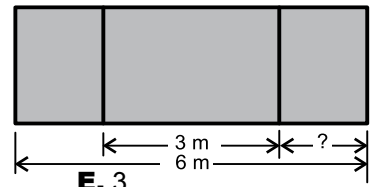
1. Some blackboard is 6 metre wide. The middle part is 3 metre wide.
Both side-boards have the same width.
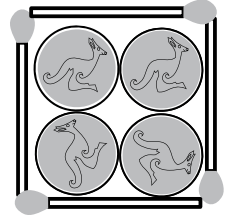How many metre is the width of the right side-board?

A. 1   **B.** 1,25   **C.** 1,5   **D.** 1,75   **E.** 3

2. Luke paints LEVE KANGOEROE on a wall.
He paints different letters in different colours, and the same letters in the same colour.
How many different colours does Luke need?

A. 7   **B.** 8   **C.** 9   **D.** 10   **E.** 13

3. Julia makes a square out of four matches.
The picture shows that four coins fit in exactly.
Now she would like to make a square that will fit exactly 16 coins in the same way.
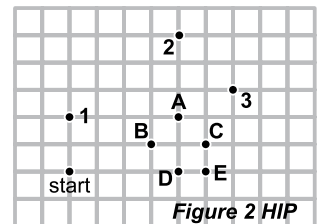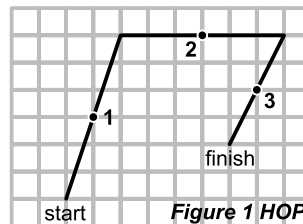How many matches will she need then?

A. 8   **B.** 10   **C.** 12   **D.** 15   **E.** 16

4. The rows of seats in an airplane are numbered 1 through 25. There is no row with number 13.
Row 15 has 4 passenger seats, all other rows have 6 seats.
How many passengers can be seated in the airplane?

A. 120   **B.** 138   **C.** 142   **D.** 144   **E.** 150

5. Two kangaroos, Hip and Hop, jump over three stones, first over 1, then over 2 and over 3 finally.
Each time the stone is exactly in the middle of the jump. Figure 1 shows how Hop jumps over
the stones from START to FINISH.
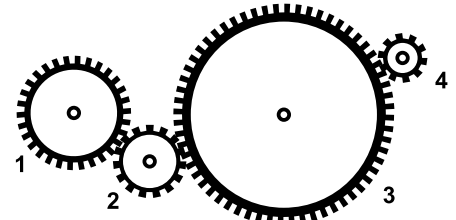Hip starts at some other place.
Figure 2 shows Hip's START.

Figure 1 HOP

Figure 2 HIP

Which of the points A, B, C, D or E is
Hip's FINISH?

A. A   **B.** B   **C.** C   **D.** D   **E.** E

6. Every whole number has been coloured red, blue, or green.
1 is red, 2 is blue, 3 is green, 4 is red, 5 is blue, 6 is green, 7 is red again, etcetera.
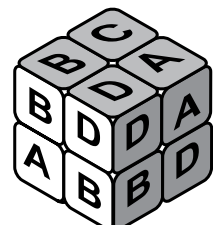Which colour has the number that you get when you add a red number and a blue number?

A. blue   **B.** green   **C.** red   **D.** red or blue   **E.** you cannot tell

7. Four cog wheels are linked together as shown in the picture.
The first cog wheel has 30 teeth, the second 15,
the third 60 and the fourth cog wheel 10.
How many times does the the fourth cog wheel turn around
when the first turns around once?

A. 3   **B.** 4   **C.** 6   **D.** 8   **E.** 9

8. Tim has 8 dice with letters on the faces.
All sides of a dice show the same letter.
He makes a cube of the dice.
Only the letters A, B, C and D are used.
Nowhere do the same letters touch each other.
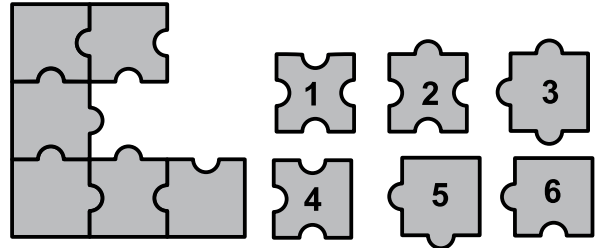Which letter is on the dice you cannot see in the picture?

A. A   **B.** B   **C.** C   **D.** D   **E.** impossible to tell

9. When it is 17.00 hours in Amsterdam, it is 8.00 hours on the same day in San Francisco.
Emma went to sleep on Tuesday at 21.00 hours in San Francisco.
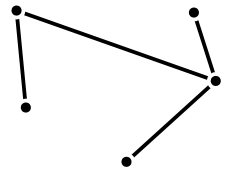What was the time in Amsterdam at that moment?

A. Tuesday 6.00 hours   **B.** Tuesday 12.00 hours   **C.** Tuesday 18.00 hours
D. Wednesday 1.00 hours   **E.** Wednesday 6.00 hours

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10. Which three puzzle pieces will finish the puzzle?
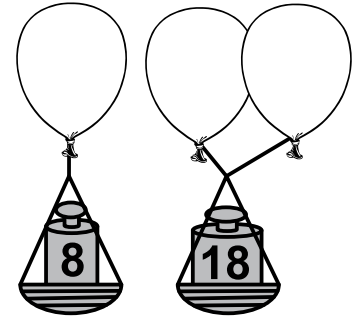
A. 1, 2, 5   **B.** 1, 3, 6   **C.** 1, 4, 5   **D.** 2, 3, 5   **E.** 2, 3, 6

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11. Wonderland has five cities. Every pair of cities is connected by a single road.
Four roads have been drawn on the map of Wonderland already.
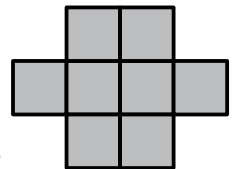How many more roads will have to be drawn to finish the map?

A. 3   **B.** 4   **C.** 5   **D.** 6   **E.** 7

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12. A balloon remains floating when a basket with 8 kg is attached underneath.
Two such balloons remain floating when the same basket with 18 kg is attached.
How many kg is the weight of the basket?

A. 1   **B.** 2   **C.** 3   **D.** 4   **E.** 5

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13. This figure consists of similar squares. The perimeter of the the figure is 42 cm.
How many cm^2 is the area of the figure?
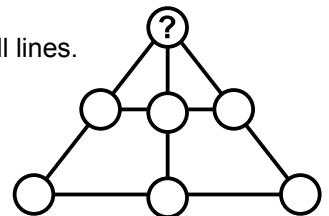
A. 8   **B.** 9   **C.** 24   **D.** 72   **E.** 128

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14. Sophia and Danny were given one basket with apples and pears by their grandmother. The basket contained 25 pieces of fruit. On their way home Sophia ate one apple and three pears. Danny ate three apples and two pears. When they got home, the basket contained just as many apples as pears.
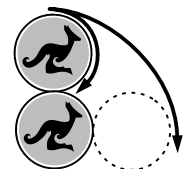How many pears did grandma give the two children?

A. 12   **B.** 13   **C.** 16   **D.** 20   **E.** 21

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15. Write down the numbers 1 through 7 in the circles.
When you add three numbers on a line, the result should be the same for all lines.
Which number should go at the top of the triangle?
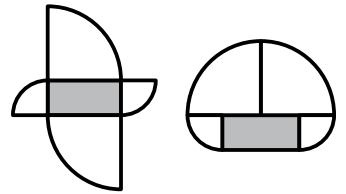
A. 1   **B.** 3   **C.** 4   **D.** 5   **E.** 6

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16. The upper coin is rotated around the lower coin to the open circle next to it.
Which way do the coins lie together now?

A.   **B.**   **C.**   **D.**   **E.**

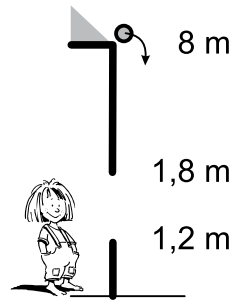**17.** The two figures are made out of the same five pieces.
The grey piece is a 5x10 cm rectangle, the other four are quarter-circles.
The perimeters of the two figures are different.
By how many cm do the perimeters differ?

A. 2,5   **B.** 5   **C.** 10   **D.** 20   **E.** 30

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18. A bouncing ball is dropped from the roof of a house.
The roof is 8 meters high.
Every time the ball hits the ground it bounces back to half the previous height.
How often will you see the ball pass by from a window of which the lower side is
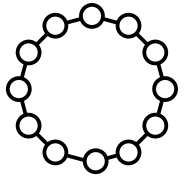at 1.20 m and the higher side is at 1.80 m?

8 m

1,8 m

1,2 m

A. 2   **B.** 3   **C.** 4   **D.** 5   **E.** 6

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19. Twelve children are at a birthday party. The children are aged 6, 7, 8, 9, and 10 years.
Each of these ages occurs. Four of the children are 6 years old.
Most children are 8 years old.
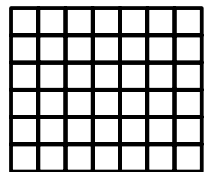What is the average age of the twelve children?

A. 6   **B.** 6,5   **C.** 7   **D.** 7,5   **E.** 8

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20. The numbers 1 through 12 form a circle.
Two numbers that are next to each other always differ by 1 or 2.
Which of the following numbers are next to each other?

A. 3 en 4   **B.** 5 en 6   **C.** 6 en 7   **D.** 8 en 10   **E.** 9 en 10

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21. Ismael cuts the rectangle shown in pieces, along the lines.
All pieces are squares.
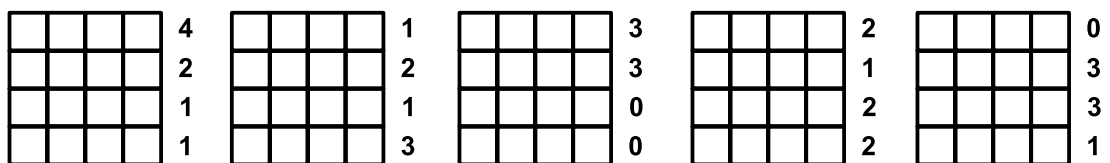What is the least number of squares Ismael could cut up the rectangle into?

A. 4   **B.** 5   **C.** 7   **D.** 9   **E.** 42

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22. Lisa makes marinade from vinegar, wine and water.
She uses vinegar and wine in a ratio of 1:2 and wine and water in a ratio of 3:1.
What is true?

A. The marinade contains more vinegar than wine.
B. The marinade contains more water than vinegar.
C. The marinade contains more vinegar than wine and water together.
D. The marinade contains more water than wine and vinegar together.
E. The marinade contains more wine than vinegar and water together.

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23. A puzzle book contains the following puzzles. Some boxes have to be coloured red. Next to every row
and below every column the number of boxes is given that has to be coloured red in that row or column.
Which puzzle has a solution?


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            4                1                3                2                0
            2                2                3                1                3
            1                1                0                2                3
            1                3                0                2                1
A.  0  3  3  2   B.  2  2  3  1   C.  1  3  1  1   D.  2  1  2  2   E.  0  3  1  3
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24. The street house number of Stephen consists of 3 digits. When you drop the first digit of that number,
you will get the house number of Bram. When you drop the first digit of his number again, you will get
the house number of Ismael. When you add up the three house numbers, you will get 912.
What is the middle digit of the house number of Stephen?

A. 0   **B.** 2   **C.** 3   **D.** 4   **E.** 5