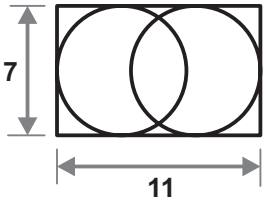
8. Two circles are drawn in in a rectangle of 7 by 11.
Each circle is tangent to three sides of the rectangle.

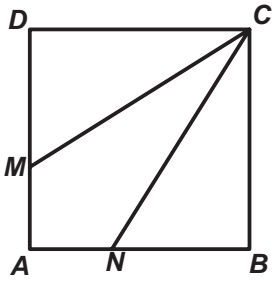


What is the distance between the two centres of the circles?

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

---

9. The sides of square *ABCD* are 3 cm.
Points *M* and *N* are on sides *AD* and *AB*.
By drawing the line segments *CM* and *CN* the square will be divided in three pieces of equal area.



How long is *DM*?

A. 0,5 cm **B.** 1 cm **C.** 1,5 cm **D.** 2 cm **E.** 2,5 cm

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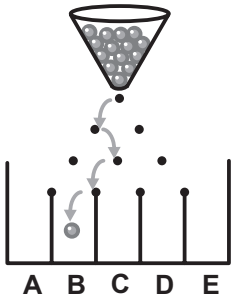
10. A little metal ball falls from the top on the upper pin.
Whenever the little metal ball hits a pin, it goes left or right.
One possible route for the little bullet has been drawn alongside.



How many routes are there for the little bullet to get into tray B?

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

---

11. *Myrthe* has multiplied two 2-digit numbers.
In this correct calculation she has erased three digits.
She now adds the three digits she erased.

What is the outcome?

A. 5 **B.** 6 **C.** 9 **D.** 12 **E.** 14

---

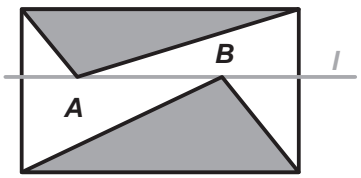
12. A rectangle consists of 40 little squares.
The rectangle has more than one row of little squares.
Anton has coloured the middle row of little squares.

How many little squares did *Anton* leave **uncoloured**?

A. 20 **B.** 30 **C.** 32 **D.** 35 **E.** 39

---

13. Line *l* is parallel to the top edge of the rectangle.
Points *A* and *B* lie on *l*.
The grey triangles have a total area of 10 cm².



How many cm² is the area of the rectangle?

A. 18 **B.** 20 **C.** 22 **D.** 24
E. hat depends on the positions of point *A* and point *B*

---

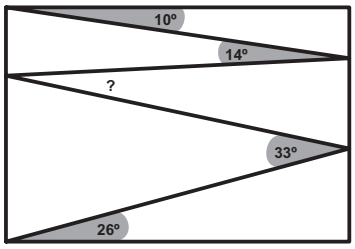
14. Behind one of the three doors a lion is locked up.
On door 1 is a note with the text “the lion is behind this door”.
On door 2 is a note: “ the lion is not behind this door”.
On door 3 is a note: “2 + 3 = 2 × 3”.
Only one inscription is correct.

.

Behind which door is the lion?

A. behind door 1 **B.** behind door 2 **C.** The lion can be behind door 1 or door 2
D. behind door 3 **E.** the lion can be behind any door

15. *Fenna* draws a zig-zag-line inside a rectangle.
Doing so she makes angles of 10°, 14°, 33° and 26°, as can be seen in the picture.



What is the size of the angle with the question mark?

A. 11° **B.** 12° **C.** 16° **D.** 17° **E.** 33°

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16. *Iris* makes a list with some prime numbers, which are all smaller than 100.
A prime number is a number that is not equal to 1 and that is only divisible by 1 and by itself.
She only uses the digits 1, 2, 3, 4 and 5 and she uses each of these digits exactly once.

Which prime number will definitely be on her list then?

A. 2 **B.** 5 **C.** 31 **D.** 41 **E.** 53

---

17. *Sami* has to know the weight of a book to the nearest half gram. His scales only weigh to the nearest 10 grams. Therefore *Sami* weighs a number of identical books simultaneously.

At least how many books should *Sami* weigh simultaneously?

A. 5 **B.** 10 **C.** 15 **D.** 20 **E.** 50

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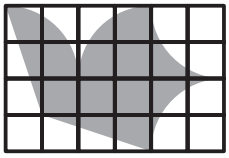
18. This rectangular flag shows a flying pigeon.
The pigeon has an area of 192 cm².
The perimeter of the pigeon consists only of straight lines and parts of circles.

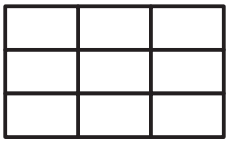


What are the dimensions of the flag?

A. 6 by 4 cm **B.** 12 by 8 cm **C.** 20 by 12 cm **D.** 24 by16 cm **E.** 30 by 20 cm

---

19. *Max* has written the numbers 1 through 9 each in of the nine cells of the table, a different number in each cell. Next he added the numbers in each row and in each column. Five of the answers are 12, 13, 15, 16 en 17.

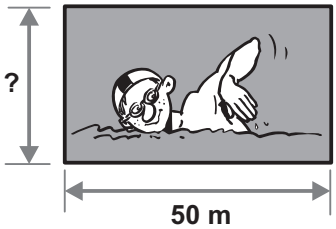


What is his sixth answer?

A. 13 **B.** 14 **C.** 15 **D.** 16 **E.** 17

---

20. *Sander* and *Youssef* are racing each other. *Sander* runs around the swimming pool. *Youssef* swims laps of 50 meters (in the length of the pool that is). *Sander* runs three times as fast as *Youssef* swims.
When *Youssef* finished six laps, *Sander* ran exactly five times around the swimming pool.



What is the width of the swimming pool?

A. 25 m **B.** 40 m **C.** 50 m **D.** 80 m **E.** 180 m

---

21. 130 members of some association choose a new chairman. There are three candidates.
When part of the votes is counted, *Tom* has 24 votes, *Alvian* has 29 and *Yoeke* has 37 votes.

How many more votes does *Yoeke* need to be sure to get elected?

A. 13 **B.** 14 **C.** 15 **D.** 16 **E.** 17

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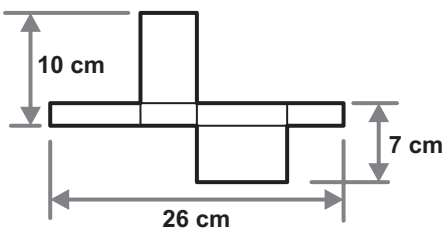
22. A box shaped as a cuboid can be folded from this piece of cardboard.



What is the content of that box?

A. 43 cm³ **B.** 70 cm³ **C.** 80 cm³ **D.** 100 cm³ **E.** 1820 cm³

23. "350 days of sunshine per year!" says the advert for a tropical island. *Harun* goes on holidays to this island this year (2018). He wants to make sure that it will be sunny at least two days in a row.

At least how many days should *Harun* go to that island at least, if the advert is correct?

A. 17 **B.** 21 **C.** 31 **D.** 32 **E.** 35

---

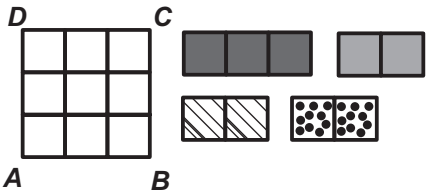
24. Eleven points are drawn on a straight line. If you add the distances from the first point to each of the other points you will get 2018. If you add the distances from the second point to each of the other points (including the distance to the first point) you will get 2000.

What is the distance between the first and the second point?

A. 1 **B.** 2 **C.** 3 **D.** 9 **E.** 18

---

25. I have drawn a 3x3 square *ABCD* on a piece of paper and I have glued it to the table. Furthermore I have got four loose pieces of special paper. A black piece of exactly 1x3 and three pieces of exactly 1x2, one light grey, one with dots and one with stripes.



In how many different ways can I cover the large square with the pieces of special paper?

A. 32 **B.** 48 **C.** 60 **D.** 72 **E.** 96

---

26. *Nick* placed dominoes in a row. But the row is not correct: Bordering parts should have the same number of dots. *Nick* is allowed a number of turns now. A turn consist of turning a domino around or exchanging places of any two dominoes.

How many turns will it take *Nick* at least to obtain a correct row?

A. 1 **B.** 2 **C.** 3 **D.** 4
E. it is impossible for *Nick* to obtain a correct row

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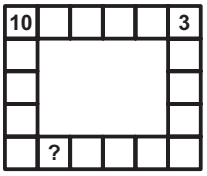
27. *Julia* has to write a number in every box alongside. Each box has two neighbours: these are the boxes that share a side with this box.
When you add the numbers of those two neighbours you should get the number of the box itself. Two of those numbers have been filled in already.



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Which number will be in the box with the question mark?

A. -13 **B.** -3 **C.** 7 **D.** 10 **E.** 13

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28. *Amira*, *Bo* and *Chantal* went shopping. *Bo* spent 15% of what *Chantal* has spent. *Amira* spent 60% more than *Chantal* did. Together the girls spent 55 euros.

How much did *Amira* spend?

A. € 3 **B.** € 20 **C.** € 25 **D.** € 26 **E.** € 32

---

29. *Ricardo* practices the long jumping. After a number of jumps his average is 3.80 meters. Now he jumps 3.99 meters and that improves his average to 3.81 meters. He has one final jump.

How many meters does his jump have to be so that his average will be 3.82 meters?

A. 3.97 **B.** 4.00 **C.** 4.01 **D.** 4.03 **E.** 4.04

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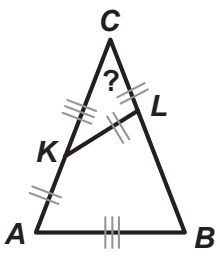
30. Triangle *ABC* is isosceles. Points *K* and *L* are on sides *AC* and *BC*, so that *AK=KL=LC* and *KC=AB*.



What is the size of angle *C*?

A. 30° **B.** 35° **C.** 36° **D.** 40° **E.** 44°