3 points

1) How many pieces of string are there in the picture?

A) 3 B) 4 C) 5 D) 6 E) 7

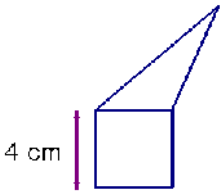
2) In a class there are 9 boys and 13 girls. Half of the children in this class have caught a cold. How many girls at least have caught a cold?

A) 0 B) 1 C) 2 D) 3 E) 4

3) 6 kangaroos gather 6 sacks of grass in 6 minutes. How many kangaroos will gather 100 sacks of grass in 100 minutes?

A) 100 B) 60 C) 6 D) 10 E) 600

4) The triangle and the square have the same perimeter. What is the perimeter of the whole figure (a pentagon)?

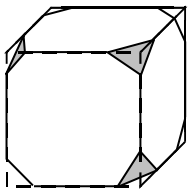


A) 12 cm B) 24 cm C) 28 cm D) 32 cm
E) It depends on the triangle measures.

5) The florist had 24 white, 42 red and 36 yellow roses. At most, how many identical bunches can she make, if she wants to use all the flowers?

A) 4 B) 6 C) 8 D) 10 E) 12

6) A cube has all its corners cut off, as shown. How many edges does the resulting shape have?



A) 26 B) 30 C) 36 D) 40
E) another answer

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7) Dan has 9 coins (each is worth 2 cents); while his sister Ann has 8 coins, each being 5 cent coins. What is the least number of coins they should interchange (with each other) in order to equalize their money?

A) 4 B) 5 C) 8 D) 12
E) it is impossible to do

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4 points

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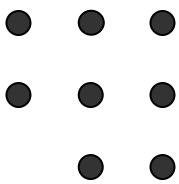
8) How many squares can be drawn by joining the dots with line segments?



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

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9) If there are two buses on a circular bus route, the interval between them is 25 min. How many extra buses are needed to shorten the interval by 60%?

A) 1 B) 2 C) 3 D) 5 E) 6

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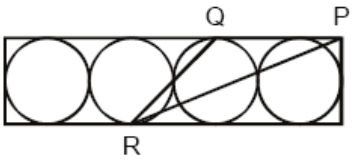
10) Four tangent congruent circles of radius 6 cm are inscribed in a rectangle. If P is a vertex and Q and R are points of tangency, what is the area of triangle PQR?



A) 27 cm^2 B) 45 cm^2 C) 54 cm^2

D) 108 cm^2 E) 180 cm^2

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11) We decide to visit four islands (A, B, C and D) by ferry-boat. We start from the mainland and we return in the end to the mainland. B can be reached only from A or from the mainland, A and C are connected to each other and with the mainland and D is connected only with A. Which is the minimum number of ferry runs that we need, if we want to visit all the islands?

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

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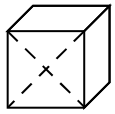
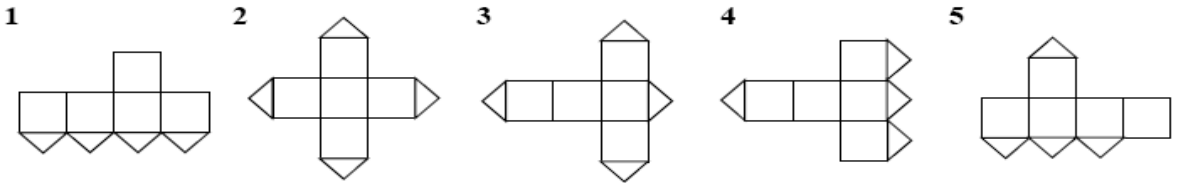
12) One of the cube faces is cut along its diagonals (see the fig.). Which of the following nets are impossible?





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

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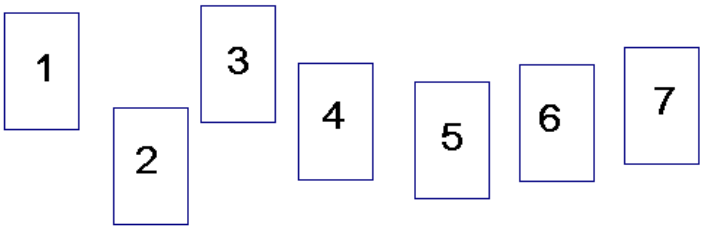
13) A box contains seven cards. The cards are numbered from 1 to 7. Mary picks, at random, three cards from the box and afterwards John picks two cards. Two cards are left in the box. Then Mary says to John: "I know that the sum of the numbers of your cards is even." The sum of the numbers on Mary´s cards is equal to



A) 10 B) 12 C) 6 D) 9 E) 15

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14) In an isosceles triangle *ABC*, the bisector *CD* of the angle *C* is equal to the base *BC*. Then the angle *CDA* is equal to

A) 90º B) 100º C) 108º D) 120º
E) impossible to determine

---

5 points

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15) A wooden cube 11 x 11 x 11 is obtained by sticking together 11^3 unit cubes. What is the largest number of unit cubes visible from a same point of view?

A) 328 B) 329 C) 330 D) 331 E) 332

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16) A boy always speaks the truth on Thursdays and Fridays, always tells lies on Tuesdays, and randomly tells the truth or lies on other days of the week. On seven consecutive days he was asked what his name was, and on the first six days he gave the following answers in order: John, Bob, John, Bob, Pit, Bob. What did he answer on the seventh day?

A) John B) Bob C) Pit D) Kate E) another answer

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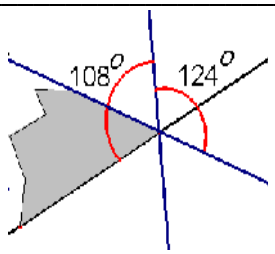
17) Three lines intersect in one point. Two angles are given in the figure. How many degrees is the grey angle?



A) 52° B) 53° C) 54°
D) 55° E) 56°

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18) Heidi and Peter are going for a hike in the mountains. In the village they read on a sign that their destination is 2 hours and 55 minutes away (on foot). They leave the village at 12 o'clock. At one o'clock they sit down for their first rest and read on a different sign that the destination is only 1 hour and 15 minutes away. After a quarter of an hours' break they continue their hike at the same speed as before without any further breaks. At what time will they reach their destination?

A) 14:30 B) 14:00 C) 14:55 D) 15:10 E) 15:20

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19) Points A, B, C and D are marked on the straight line in some order. It is known that $AB = 13$, $BC = 11$, $CD = 14$ and $DA = 12$. What is the distance between the farthest two points?

A) 14 B) 38 C) 50 D) 25 E) another answer

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20) In the equality KAN – GAR = OO any letter stands for some digit (different letters for different digits, equal letters for equal digits). Find the largest possible value of the number KAN ?

A) 987 B) 876 C) 865 D) 864 E) 785

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21) Some straight lines are drawn on the plane so that all angles 10°, 20°, 30°, 40°, 50°, 60°, 70°, 80°, 90° are among the angles between these lines. Determine the smallest possible number of these straight lines.

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