



3 point questions

1. $\frac{2007}{2+0+0+7} =$

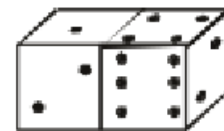
- A) 1003 B) 75 C) 223 D) 213 E) 123

2. Rose bushes were planted in a line on both the sides of the path. The distance between each of the two consecutive bushes was 2 m. How many bushes were planted if the path is 20 m long and the first two bushes are planted exactly where the path starts and the last two bushes are were the path ends?

- A) 22 B) 20 C) 12 D) 11 E) 10

3. What is the sum of the points on the invisible faces of the dice?

- A) 15 B) 12 C) 7 D) 27 E) another answer

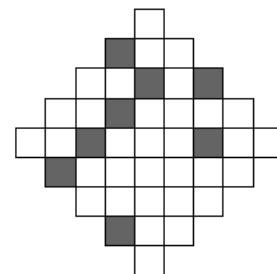


4. The points $A = (2006, 2007)$, $B = (2007, 2006)$, $C = (-2006, -2007)$, $D = (2006, -2007)$ and $E = (2007, -2006)$ are marked on a coordinate grid. The horizontal line segment is

- A) AD B) BE C) BC D) CD E) AB

5. What is the minimum number of the little squares which we have we to shade in the picture on the right so that it has an axis of symmetry?

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



6. A palindromic number is a number which remains the same when its digits are written in reverse order. For example 13931 is a palindromic number. What is the difference between the smallest 5-digit palindromic number and the biggest 6-digit palindromic number?

- A) 989989 B) 989998 C) 998998 D) 999898 E) 999988

7. If you choose three numbers from the grid shown here, so that you have one number from each row and also one number from each column, and then add the three numbers together, what is the largest sum that can be obtained?

1	2	3
4	5	6
7	8	9

- A) 12 B) 15 C) 18 D) 21 E) 24

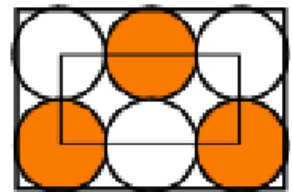


4 points questions

8. Number x is a negative integer. Which formula gives the biggest number?

- A) $x + 1$ B) $2x$ C) $-2x$ D) $6x + 2$ E) $x - 2$

9. In the picture, there are six identical circles. The circles touch the sides of a large rectangle and each other as well. The vertices of the small rectangle lie in the centres of the four circles. The circumference of the small rectangle is 60 cm. What is the circumference of the large rectangle?

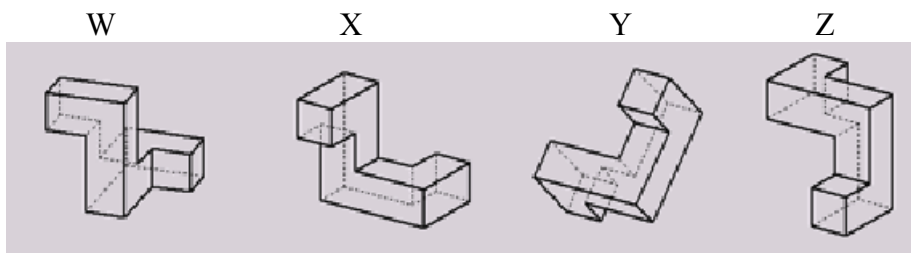
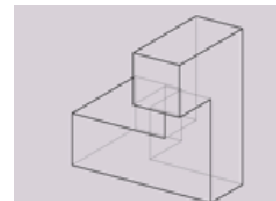


- A) 160 cm B) 140 cm C) 120 cm D) 100 cm E) 80 cm

10. Al and Bill jointly weigh less than Charlie and Dan; Charlie and Ed jointly weigh less than Frank and Bill. Which one of the following sentences is certainly true?

- A) Al and Ed jointly weigh less than Frank and Dan.
 B) Dan and Ed jointly weigh more than Charlie and Frank.
 C) Dan ja Frank jointly weigh more than Al and Charlie.
 D) Al and Bill jointly weigh less than Charlie and Frank.
 E) Al, Bill and Charlie jointly weigh as much as Dan, Ed and Frank.

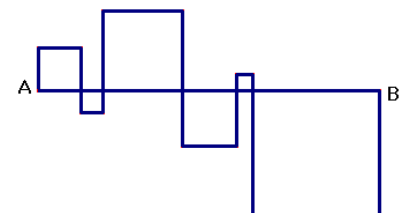
11. To which of the following positions can we rotate the given object?

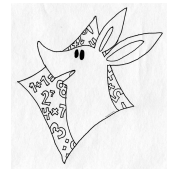


- A) W and Y B) X and Z C) only Y D) none of these E) W, X and Y

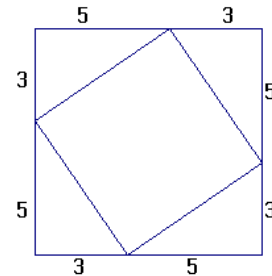
12. In the picture, all quadrates are squares. The line segment AB is 24 cm. Andrew made the figure below using a wire. How long was the wire?

- A) 48 cm B) 72 cm C) 96 cm D) 56 cm E) 106 cm





13. A small square is inscribed in a big one as shown in the figure.
Find the area of the small square.



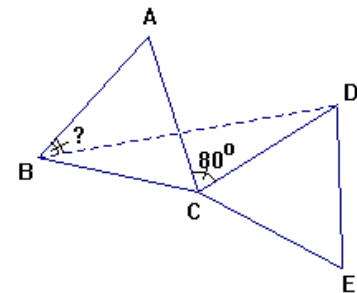
- A) 16 B) 28 C) 34 D) 36 E) 49

14. How many percent of the numbers 1, 2, 3, 4, ..., 10 000 are squares? A square is the second power of a number.

- A) 1 % B) 1,5 % C) 2 % D) 2,5 % E) 5 %

5 point questions

15. Triangles ABC and CDE are equal equilateral triangles.
Angle ACD is 80° . How big is angle ABD ?



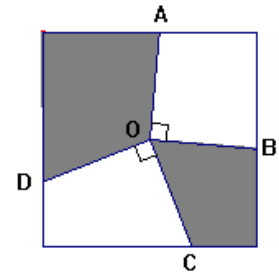
- A) 25° B) 30° C) 35° D) 40° E) 45°

16. A survey found out that $\frac{2}{3}$ of all the customers buy product A and $\frac{1}{3}$ buy product B. After a publicity campaign for product B a new survey showed that $\frac{1}{4}$ of the customers who preferred product A are now buying product B. Now

- A) $\frac{5}{12}$ of the customers buy product A and $\frac{7}{12}$ buy product B
 B) $\frac{1}{4}$ of the customers buy product A and $\frac{3}{4}$ buy product B
 C) $\frac{7}{12}$ of the customers buy product A and $\frac{5}{12}$ buy product B
 D) $\frac{1}{2}$ of the customers buy product A and $\frac{1}{2}$ buy product B
 E) $\frac{1}{3}$ of the customers buy product A and $\frac{2}{3}$ buy product B



17. The centre of the square is O . Points A, B, C and D are on the sides of the square so that OA is perpendicular to OB and OC is perpendicular to OD . The side of the square is 2. The shaded area of the square equals



- A) 1 B) 2 C) 2,5 D) 2,25 E) depends on the choice of the points B and C

18. In order to obtain the number 8^8 , we must raise 4^4 to the power

- A) 2 B) 3 C) 4 D) 8 E) 16

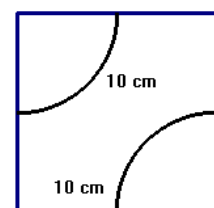
19. A walker takes a 2 hour tour consisting of: first, a flat section, then another one, climbing, and then he returns (first going down then flat again). His speed is 4 km/h on the flat part, 3 km/h when going up and 6 km/h when going down. How long is the tour?

- A) we can't know B) 6 km C) 7,5 km D) 8 km E) 10 km

20. A three-digit integer has been divided by 9. As a result, the sum of the digits decrease by 9. How many three-digit numbers possess this property?

- A) 1 B) 2 C) 4 D) 5 E) 11

21. On a square-shaped tile there are two curved lines connecting the midpoints of two sides of the tile (see the picture). A square surface is covered by 16 such tiles. The curved lines meet the curved lines in the adjacent tiles to build longer curves. How long is the longest possible connected curved line?



- A) 150 cm B) 200 cm C) 210 cm D) 220 cm E) 320 cm