



NAME CLASS/GROUP

Points

Kangaroo leap

Unfasten this answer sheet.

Write your answer under the problem number.

Leave the space empty if you do not know the answer.

It is not a good idea to guess, a wrong answer will cause a deduction of 1/4 of the max points!

Problem	1	2	3	4	5	6	7
Answer							

Problem	8	9	10	11	12	13	14
Answer							

Problem	15	16	17	18	19	20	21
Answer							



3-Point-Problems

1. Among these numbers, which is even?

(A) 2009

(B) $2 + 0 + 0 + 9$

(C) $200 - 9$

(D) 200×9

(E) $200 + 9$

2. The star in the picture is formed from 12 identical small equilateral triangles. The perimeter of the star is 36 cm. What is the perimeter of the dark hexagon?

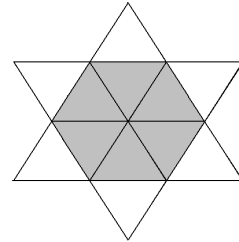
(A) 6 cm

(B) 12 cm

(C) 18 cm

(D) 24 cm

(E) 30 cm



3. Harry delivers folders in Long Street. He must deliver a folder to all the houses with an odd number. The first house has number 15, the last one has number 53. How many houses does Harry deliver to?

(A) 19

(B) 20

(C) 27

(D) 38

(E) 53

4. There are cats and dogs in the room. The number of the cats' paws is twice the number of the dogs' noses. Then the number of cats is

(A) twice the number of dogs

(B) equal to the number of dogs

(C) half the number of dogs

(D) $\frac{1}{4}$ of the number of dogs

(E) $\frac{1}{6}$ of the number of dogs

5. Which of the following links consist of more than one piece of rope?

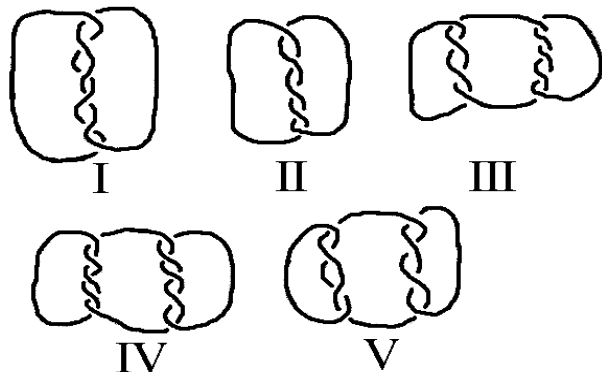
(A) I, III, IV and V

(B) III, IV and V

(C) I, III and V

(D) all of them

(E) none of the above



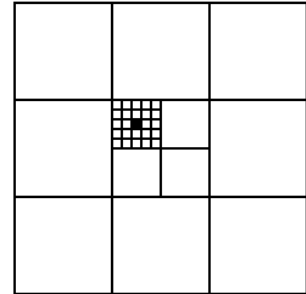


6. At a party there were 4 boys and 4 girls. Boys danced only with girls and girls danced only with boys. Afterwards we asked all of them, how many dance partners they each had. The boys said: 3, 1, 2, 2. Three of girls said: 2, 2, 2. What number did the fourth girl say?

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

7. The area of the big square is 1. What is the area of the black little square?

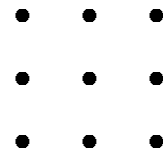
- (A) $\frac{1}{100}$ (B) $\frac{1}{300}$ (C) $\frac{1}{600}$ (D) $\frac{1}{900}$ (E) $\frac{1}{1000}$



4-Point-Problems

8. What is the smallest number of points in the figure one needs to remove so that no 3 of the remaining points are collinear?

- (A) 1 (B) 2 (C) 3 (D) 4 (E) 7



9. The elevator can take either 12 adults or 20 children. At most how many children could go up with 9 adults?

- (A) 3 (B) 4 (C) 5 (D) 6 (E) 8

10. Nick measured all 6 angles in two triangles - one acute-angled and one obtuse-angled. He remembered four of those angles: 120° , 80° , 55° , and 10° . What is the smallest angle of the acute-angled triangle?

- (A) 5° (B) 10° (C) 45°
(D) 55° (E) impossible to determine

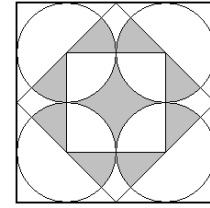
11. How many positive integers have equally many digits in the decimal representation of their square and their cube?

- (A) 0 (B) 3 (C) 4
(D) 9 (E) infinitely many



12. What part of the outer square is shaded?

- (A) $\frac{1}{4}$ (B) $\frac{\pi}{12}$ (C) $\frac{\pi + 2}{16}$ (D) $\frac{\pi}{4}$ (E) $\frac{1}{3}$

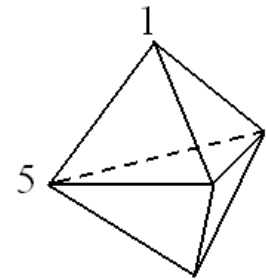


13. The product of four different positive integers is 100. What is their sum?

- (A) 10 (B) 12 (C) 15 (D) 18 (E) 20

14. The picture shows a solid formed with 6 triangular faces. At each vertex there is a number. For each face we consider the sum of the 3 numbers at the vertices of that face. If all the sums are the same and two of the numbers are 1 and 5 as shown, what is the sum of all the 5 numbers?

- (A) 9 (B) 12 (C) 17 (D) 18 (E) 24



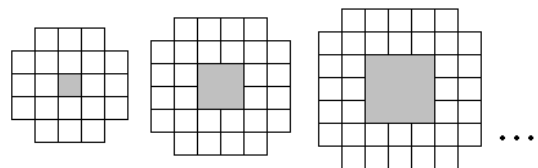
5-Point-Problems

15. On the island of nobles and liars 25 people are standing in a queue. Everyone, except the first person in the queue, said that the person in front of him in the queue is a liar, and the first man in the queue said that all people standing behind him are liars. How many liars are there in the queue? (Nobles always speak the truth, and liars always tell lies.)

- (A) 0 (B) 12 (C) 13
(D) 24 (E) impossible to determine

16. The first three patterns are shown. How many white little squares are needed to build the 10th pattern in this sequence?

- (A) 76 (B) 80 (C) 84
(D) 92 (E) 100

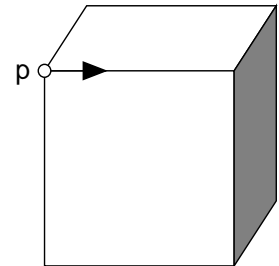




17. If I place a $6\text{ cm} \times 6\text{ cm}$ square on a triangle, I can cover up to 60% of the triangle. If I place the triangle on the square, I can cover up to $\frac{2}{3}$ of the square. What is the area of the triangle?

- (A) $22\frac{4}{5}\text{ cm}^2$ (B) 24 cm^2 (C) 36 cm^2 (D) 40 cm^2 (E) 60 cm^2

18. Starting at point P, we move along the edges, starting in the direction of the arrow. At the end of the edge we have to choose: going to the right or to the left. At the end of the second edge we have to choose again. And so on. We choose alternating right and left. After how many edges do we return to point P for the first time?



- (A) 2 (B) 4 (C) 6 (D) 9 (E) 12

19. We want to colour the squares in the grid using colours A, B, C and D in such a way that neighbouring squares do not have the same colour (squares that share a vertex are considered neighbours). Some of the squares have been coloured as shown. What are the possibilities for the shaded square?

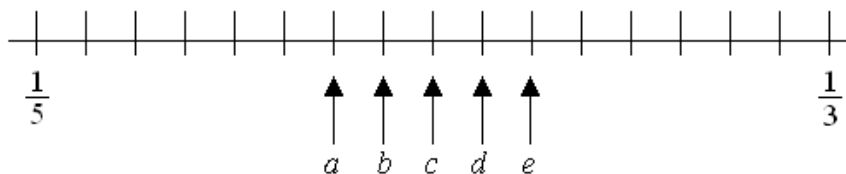
A	B			
C	D			
		B		
B				

- (A) only B (B) only C (C) only D
(D) either C or D (E) not possible

20. How many ten-digit numbers composed only of digits 1, 2 or 3 exist, in which any two neighbouring digits differ by 1.

- (A) 16 (B) 32 (C) 64 (D) 80 (E) 100

21. The fractions $\frac{1}{3}$ and $\frac{1}{5}$ are placed on a number-line.



Where is the fraction $\frac{1}{4}$?

- (A) a (B) b (C) c (D) d (E) e