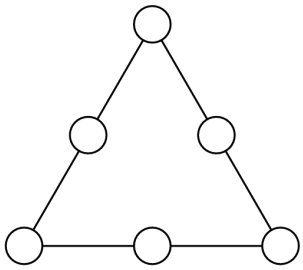
Operation Problems

1 （1分）In a magic triangle, each of the six whole numbers $10-15$ is placed in one of the circles so that the sum, S, of the three numbers on each side of the triangle is the same. The largest possible value for S is ? (1985 AMC 8 Problems, Question #24)

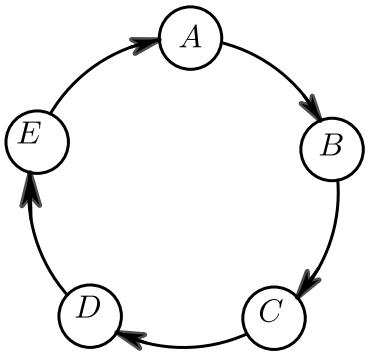


A. 36　　B. 37　　C. 38　　D. 39　　E. 40

2 （1分）There are 2018 students standing in a line, They count off in the repeating pattern $1, 2, 3, 4, 3, 2, 1, 2, 3, 4, 3, 2, 1 \ldots$ What number will the 2018th student say?

A. 1　　B. 2　　C. 3　　D. 4

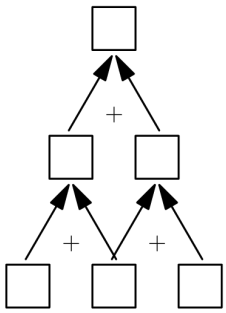
3 （1分）As shown in the diagram, five people (A, B, C, D, and E) stand in a circle playing a passing game. Starting from A, the ball is passed clockwise to the next person each time. After the ball has been passed 17 times, who is holding the ball?



A. A　　B. B　　C. C　　D. D

4 （1分）Three different one-digit positive integers are placed in the bottom row of cells. Numbers in adjacent cells are added and the sum is placed in the cell above them. In the

second row, continue the same process to obtain a number in the top cell. What is the difference between the largest and smallest numbers possible in the top cell? (2006 AMC 8 Problems, Question #22)



A. 16 B. 24 C. 25 D. 26 E. 35

5 （1分）Lucy is playing an adding-number game in the 4×4 table. In the table, all the grids are starting with 0. For each step, Lucy can choose one of the three operations as below:

①Choose one grid and add 4 to the number.

②Choose two adjacent grids (with common lines) and add 2 to each of their numbers.

③Choose a 2×2 square and add 1 to each of the numbers inside.

After many operations, Lucy finds that all the numbers are different from each other. How many times of operations at least does she make?

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

A. 30 B. 45 C. 48 D. 36 E. 24