

2025 June AMC 10 Week 2 Day 1 - Sequences

- 1 (1分) Lily wants to distribute **210** chess pieces into several boxes. The first box contains **1** piece, the second box contains **2** pieces, the third box contains **3** pieces, and so on. The pieces are exactly when placed in this manner. How many boxes does Lily use?

A. 18 B. 19 C. 20 D. 21 E. 22

- 2 (1分) Given that both sequences $a_1, a_2, \dots, a_{31}$ and $b_1, b_2, \dots, b_{31}$ are arithmetic sequences, each containing **31** terms. If $a_2 + b_{30} = 29$ and $a_{30} + b_2 = -9$, find the total sum of these two sequences.

A. 29 B. 60 C. 200 D. 310 E. 400

- 3 (1分) In a biology lab experiment, a petri dish initially contains **200** bacteria. During daylight hours, the bacteria count decreases by **65** due to UV exposure, while during nighttime hours, it increases by **40** due to nutrient dispersion. On which daylight period will all bacteria perish?

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

- 4 (1分) Alex has a **20**-week marathon training plan. The first week he runs **2** kilometers. For the following weeks, he doubles his weekly distance until it exceeds **30** kilometers. After that, he increases his weekly distance by **2** kilometers each week until it exceeds the marathon distance (**42.195** kilometers). Once exceeding the marathon distance, he maintains that weekly distance until the end of the training. What is the total distance Alex runs by the end of the training plan?

A. 724 B. 736 C. 660 D. 682 E. 692

- 5 (1分) A weather station records annual temperature changes (in degrees Celsius) relative to a baseline in a region. The first year's change is $+1^\circ\text{C}$, and the second year's change is $+2^\circ\text{C}$. Starting from the third year, the annual temperature change follows the rule:

Year $(n + 1)$ change = Year n change – Year $(n - 1)$ change ($n \geq 2$). What is the total

cumulative temperature change after 2019 years?

A. 3

B. 4

C. 5

D. 6

E. 7